The Journal of the American Medical Association

Published under the Auspices of the Board of Trustees

VOL. XLIII. CHICAGO, ILLINOIS, SEPTEMBER 3, 1904. No. 10.

Original Articles.

FURTHER STUDIES OF THE INTRACELLULAR BACTERIAL TOXINS.*

VICTOR C. VAUGHAN, M.D.

ANN ARBOR, MICH.

For the past eight years much of my time, so far as it could be given to research work, has been devoted to a study of the intracellular toxins of bacteria, and the purpose of this paper is to briefly state what I have accomplished along this line, and to formulate the theoretical conceptions that have grown out of this investigation. In this work I have been aided by several most competent assistants and students, all of whom have labored without any remuneration worthy of mention, except that which comes to everyone who engages in scientific research intelligently and conscientiously. In 1896 Perkins and I[1] reported the presence in a toxicogenic bacterium found in poisonous ice cream of an active body that proved to be soluble in alcohol, and in this respect, at least, as we shall see later, similar to the toxins which we have recently been studying.

In 1900, with McClymonds,[2] I was able to demonstrate that the colon germ, so frequently found in cheese, produces no soluble poison, but that the cell substance is markedly toxic. The bacterial cells were steamed and subsequently exposed for several days at 37 degrees to artificial gastric juice without destruction of their toxic properties. In 1901, with the aid of Cooley and Gelston,[3] I was able to make substantial advances. The large tanks, so necessary in order to obtain bacterial cell substance in large amount, were devised and put into operation. Without these the work since accomplished could not have been done, because the production of large amounts of bacterial cell substance free from constituents of the culture medium and free from contamination was essential before the chemistry of the cell could be successfully investigated. In a paper before the Association of American Physicians in 1901 I was able to make the following statements concerning the toxin of the colon bacillus:

1. The toxin is contained within the cell, from which it does not, at least under ordinary conditions, diffuse into the culture medium.

2. The toxin is not extracted from the cell by alcohol or ether.

3. Very dilute alkalies do not extract the toxin from the unbroken cells.

4. The unbroken germs may be heated to a high temperature with water without destruction of their toxin.

5. Boiling with a 0.2 per cent. aqueous solution of hydrochloric acid has but little, if any, effect on the germ cell or its contained toxin.

6. Heating the germ substance for an hour at the temperature of the water-bath with water containing from 1 to 5 per cent. hydrochloric acid breaks up the cell and lessens, but does not destroy, the toxicity of the cell content. Prolonged heating may render the toxin inert.

In the paper referred to I spoke several times of the bacterial cell wall, a structure which I am now satisfied has no existence.

In 1902 my students were able to make the following advances:

(*a*) Detweiler[4] showed that the cellular substance of micrococcus prodigiosus, bacillus violaceus, and sarcina aurantiaca and sarcina lutea contains poisonous bodies.

(*b*) Wheeler[5] demonstrated the presence in the cell substance of sarcina lutea of two carbohydrates, a nuclein body yielding xanthin basis (since obtained in crystalline form), and a proteid yielding hexon bases (also since obtained in crystals), thus showing that the cell is made up largely of a glyco-nucleo-proteid molecule.

(*c*) Leach[6] split up the colon bacillus, and proved that it also contains in its molecular structure carbohydrates, nuclein and proteid.

(*d*) Marshall and Gelston[7] determined with great accuracy the toxicity of the colon germ substance, and showed that with this immunity could be obtained, although it was neither marked nor permanent. The germ substance is, moreover, not a favorable agent to employ in inducing immunity on account of its insolubility.

(*e*) Gelston[8] found an intracellular toxin in the bacillus of diphtheria, and showed that commercial antitoxin gives no protection against the intracellular poison.

(*f*) J. Walter Vaughan[9] demonstrated, contrary to the findings of all other investigators along this line, that the anthrax bacillus does produce a poison, and that it is intracellular.

---

* Read at the Fifty-fifth Annual Session of the American Medical Association, in the Section on Pathology and Physiology, and approved for publication by the Executive Committee.

1. Ein in Eiscreme und Käse gefundener giftproducirender Bacillus, Archiv. f. Hygiene, 1896, xxxiii, 308.

2. Bacteriologic Poisons in Milk, Jacobi Festschrift, p. 108.

3. The Bacterial Toxins, Trans. Assn. Amer. Phys., 1901; The Toxin of the Colon Bacillus, THE JOURNAL A. M. A., Feb. 23, 1901; Amer. Med., May, 1901.

4. The Toxicity of the Dry, Sterile Cells of Certain Non-pathogenic Bacteria, Trans. Assn. Amer. Phys., 1902.

5. The Chemistry of Sarcina Lutea, Trans. Assn. Amer. Phys., 1902.

6. The Chemistry of Bacillus Coli Communis. Trans. Assn. Amer. Phys., 1902.

7. The Toxicity of the Cellular Substance of the Colon Bacillus, Trans. Assn. Amer. Phys., 1902.

8. The Intracellular Toxin of the Diphtheria Bacillus, Trans. Assn. Amer. Phys., 1902.

9. The Anthrax Toxin, Trans. Assn. Amer. Phys., 1902.

In 1903, Wheeler[10] made some investigations which, in my opinion, have thrown much light on the problem, inasmuch as they lead to the suggestion that the bacterial cell is essentially a chemical compound of definite and constant composition. It was found that when the cellular substance is extracted with dilute acids, the portion split off is practically the same whether 0.1 or 1 per cent. acid be employed. Furthermore, it was demonstrated that the amido-nitrogen split off with acid is the same, whether 1 per cent., 5 per cent., or 33 1/3 per cent. sulphuric acid be used.

Leach[11] obtained additional information along the same line by the action of mineral acids on the colon bacillus.

McIntyre[12] applied my methods to bacillus pyocyaneus, and demonstrated the existence of an intracellular poison in this organism.

Munson and Spencer[13] showed that the hepatic cells of vertebrates may be split up with the production of a poisonous group.

During the present year, Wheeler and I have been able, by acting on the germ substance with sodium alcoholate, to split off and obtain in soluble form highly poisonous groups. This has been accomplished with the colon, typhoid and anthrax bacilli, and with all of these we have produced antibodies which neutralize the toxin, but so far we can not speak with certainty concerning their antibacterial action. The colon toxin immunizes guinea-pigs against both itself and the living germ, but with the other organisms experiments have not been carried far enough to justify a statement one way or the other. The colon toxin split off from the germ substance is still a complex body, and gives the biuret and Millon reaction. It is freely soluble in water and absolute alcohol and insoluble in ether, petroleum ether and chloroform. The alcoholic solution as obtained from the germ substance by the action of sodium alcoholate contains two bodies, or rather two groups of bodies, one of which is poisonous, while the other is not actively so, at least. The toxin is precipitated from alcoholic solution by platinum chlorid, while the nontoxic body is left in solution. Of the mixture of the two obtained by evaporation of the alcohol in vacuo, 8 mg. is the minimum lethal dose for guinea-pigs weighing from 300 to 400 grams, but only 15 per cent. of this mixture is toxic. This makes the minimum lethal dose of the toxin between 1 and 2 mg., or one part to from 300,000 to 400,000 parts of body weight of guinea-pig. By administering gradually increased doses of this toxin, guinea-pigs are immunized, and when such immunized pigs receive 2 c.c. of a twenty-four-hour culture of a virulent colon bacillus, they are but slightly affected, while controls invariably die within from ten to twenty-four hours.

That this is the specific toxin of the colon bacillus, it seems to me there can be no doubt, because it gives immunity in the guinea-pig at least, to both dead and living cultures of the germ. This toxin is, I believe, composed of a haptophore and a toxophore group. Concerning the nature of the former, I am not prepared as yet to express an opinion. There are certain reasons for suspecting that the toxophore group is a neurin. These reasons are both chemical and physiological. Neurin is a highly poisonous body that is not decomposed on being boiled with sodium alcoholate; so is the colon toxin. Neurin acts on the respiratory center and arrests the respiratory movements, while the heart continues to beat normally. This is especially marked with our toxins, those obtained from the colon, typhoid and anthrax bacilli; most marked with the last mentioned. When this poison is injected intravenously in doses of a fraction of a milligram, the respiratory movements cease immediately, while the heart continues to beat for five minutes or even longer. It will be understood that these are only suggestions that the toxophore group is a neurin body. They are by no means proofs, and I hold the right to change my opinion on this point after further investigation. As Behring has suggested, the toxophore group may be the same in a number of different pathogenic bacteria.

When the dried colon germ substance is heated with sodium alcoholate, about one-third of the cellular substance goes into solution in the alcohol, while the rest of it remains out of solution. All the toxin is dissolved in the alcohol, provided the extraction be repeated three or four times, but, as has been stated, of the one-third of the germ substance that goes into solution in the alcohol, only about 15 per cent. is toxin.

The part of the cell substance insoluble in alcohol is soluble in water, wholly on addition of traces of acid, and while non-poisonous, it is scarcely less interesting than the toxic part. The aqueous solution contains a hemolysin and a group that splits up the hemoglobin into hematin and a globulin. The hemolysin is precipitated from the aqueous solution by the addition of acid and the application of heat. It is thermo-stable and can be heated to 110 degrees without appreciable loss of its hemolytic properties. This promises to give us a rare opportunity of finding out something more definite than is known up to the present time concerning the nature of hemolysins. I may say that traces of hemolysin have been previously found in colon cultures, and have been studied by Kayser,[14] who also found it to be thermo-stable. This hemolysin is not active at low temperatures, and requires an incubation period before it manifests its effects. So far as I know, this is the first time that it has been demonstrated that a hemolysin can be obtained by splitting up the bacterial cell with chemical agents. It will probably be found that bacterial hemolysins are chemical groups in the bacterial molecule, and that those found in solution in culture media result from the normal disintegration of the bacterial molecule, which is always taking place with more or less rapidity. I know of no previous observation of the group that splits up the hemoglobin molecule with the formation of hematin. This body is now being investigated by Cooley in my laboratory, and a report of the work will be made later.

Uniformly the bacterial toxins, so far as we have studied them, lower the temperature of guinea-pigs. This is true of both fatal and non-fatal doses. If the cellular substance of the colon bacillus be thrown into the abdominal cavity of a guinea-pig, the temperature begins to fall within two hours, and continues to do so as long as the animal lives, provided the dose is a fatal one. If at any time the temperature ceases to fall and begins to rise, even after it has fallen below 95 F., the recovery of the animal can be safely predicted. When the split-off toxin is injected the fall

10. The Action of Mineral Acid on the Cellular Substance of Bacillus Typhosus, THE JOURNAL A. M. A., 1904, xlii, 1060.
11. The Chemistry of Bacillus Coli Communis, Ibid., p. 1003.
12. The Intracellular Toxin of Bacillus Pyocyaneus, THE JOURNAL A. M. A., 1904, xlii, 1073.
13. The Extraction of a Toxin from Liver Cells, THE JOURNAL A. M. A., 1904, xlii, 1075.
14. Ueber Bakterienhämolysine, in Besonderen das Colilysin, Zeitschrift f. Hygiene, 1903, xl, 118.

begins in a few minutes and continues to do so if the animal dies. In case of recovery, the moment of change for the better is indicated by the beginning of a rise of temperature. This matter also, as well as the destruction of the bacillus in the peritoneal cavity of immunized animals, is being studied in detail by V. C. Vaughan, Jr., and we hope to give more accurate information concerning the relation of the infectious diseases to temperature.

When the sterile germ substance of the colon bacillus is thrown into the abdominal cavity of a guinea-pig, a hemorrhagic peritonitis results. When the split-off toxin is used in the same way death results, provided the dose be large enough, in a few minutes, and there is no evidence of irritation of the peritoneum. When the dose is not fatal, recovery from the split-off toxin is apparently complete within two or three hours. When the soluble toxin is injected intravenously, death occurs within from five to twenty minutes, or with very minute doses there is no apparent effect.

CONCLUSIONS.

The investigations which I have hastily outlined have led me to the following conclusions:

1. The colon bacillus in its essential part is a chemical compound as truly as sodium sulphate or phenylhydrazin.

I have been convinced of this by the following facts, ascertained in our investigations:

(*a*) When treated with dilute mineral acids, the body split off from the germ substance is uniform, both qualitatively and quantitatively, whether the acid employed be 0.1 per cent. or 1 per cent.

(*b*) The amount of amido-nitrogen split off is the same, whether 1 per cent., 5 per cent., or 33 1/3 per cent. sulphuric acid be used. These findings indicate that the germ substance has a definite chemical composition, and that cleavage occurs along a definite line under the influence of the acid. That the toxic, hemolytic, hemoglobin splitting, carbohydrate, and other groups are chemically combined in the cell, is indicated by the fact that they are not extracted by agents acting physically as solvents, but are separated only by those agents that split up molecules.

2. The colon bacillus is a chemical compound, in whose molecule we have demonstrated the existence of the following groups: Nuclein, amido, diamido, monoamido, carbohydrate, toxic, hemolytic, and hemoglobin splitting. Graphically, we may represent the colon molecule as in Figure 1.

There may be, and probably are, many other groups; then, each of these may, and probably does, contain subgroups. Besides, these groups are attached to one another to form a highly complex molecule, and the lines along which the molecule splits up depend on the kind and the amount of the energy applied. The force with which these groups are held in the molecular whole varies in strength, consequently some groups are easily split off, while others are separated only under the influence of relatively powerful agents. The toxic group in the molecule of some pathogenic bacteria drops off in the presence of moisture and at a temperature of 37 C. This is true of those germs, such as the bacilli of tetanus and diphtheria, that are said to form soluble toxins. Many germs also have hemolytic groups which become detached from the molecule under similar conditions. Some of the groups in the bacterial molecule are essential to the vitality of the cell. Such I suppose to be the case with the nuclein group, while others are not essential. The latter is probably true of the toxic group in certain bacteria, and this explains the fact that most pathogenic bacteria can be attenuated by growth in certain media, or under certain unusual conditions of temperature.

3. Every cell in the animal body contains complex molecules similar to those of the bacillus. As has been stated, my students, Munson and Spencer, have shown that a poison can be split off from the liver cell by the action of dilute mineral acids, and next year I hope to study the action of sodium alcoholate on these and other cells of the animal body.

4. The reaction of the colon molecule and a body molecule or cell is chemical, just as much so as that between sulphuric acid and calcium carbonate. When these two molecules are brought within the range of chemical attraction, if the chemism between a group in the one and a group in the other is greater than that which holds these groups in their respective molecules, a reaction takes place. Each group is split off from its molecular combination, and the two combine to form a new molecule; and the injury done the bacillus or the cell depends on the group that has been abstracted. No bacillus molecule can do the body cell harm unless such a reaction takes place. It also follows that a toxin split off from a bacterial molecule and injected in the free state into an animal does harm, or breaks down the body molecules more promptly than when the unbroken bacillus is introduced, as sodium chlorid is not a poison,

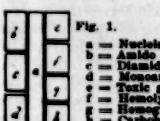


Fig. 1.

a = Nuclein group.
b = Amido group.
c = Diamido group.
d = Monoamido group.
e = Toxic group.
f = Hemolytic group.
g = Hemoglobin splitting group.
h = Carbohydrate group.

Fig. 2.—Body cell.

but if it be broken up into its constituent base and acid, either of these, when introduced into the body, destroys the first cells with which it comes in contact. This is, I think, nicely illustrated with our colon toxin. The living culture or the dead germ substance, when placed in the abdominal cavity of a guinea-pig, requires from ten to twenty-four hours to kill, because the colon molecule must be split up before the toxic group becomes active, but when the free toxic group is employed, it may kill within as many minutes, because it is ready to combine with groups in the cell instantly on coming within range of their chemism. Moreover, when the free toxin or toxic group is thrown into the abdominal cavity, it requires a longer time to kill than when injected intravenously because, in either case, it reacts with the cells with which it first comes in contact, and with which it is capable of combining. When injected intravenously, some part of the free toxic group comes in contact with the cells of the respiratory center, and death, or at least arrest of the respiratory movements, is almost instantaneous.

5. If this conception of the reaction between bacillus and cell be true, the formation of antitoxins is capable of an explanation, which seems to me simpler than any yet proposed. This may be illustrated by the accompanying figures.

Suppose that the chemical attraction between group "e" in the bacillus molecule, and group "m" in the cell molecule, is greater than that which holds these groups in their respective molecules, then these groups will be

broken away from their molecules and unite to form a new molecule, which, being saturated and stable, is not harmful. The injury done to the cell will depend on the importance that group "m" bears to the functioning power of the cell, and the injury done to the animal depends on the number of cells whose physiologic function is thus interrupted. I take it that a true toxin—understanding this term to apply only to those agents which are capable of producing antibodies in the animal organism—does not completely destroy cells. It injures animal cells, but leaves them in such a condition that they can repair themselves. Indeed, it seems to me that no other explanation is, at present, at least possible, because the formation of the anti-body is dependent on this process of repair, and an agent that destroys the body cells of the animal is a poison, but not a toxin. It is not only possible, but probable, at the present time, that at least one pathogenic organism, the tubercle bacillus, produces a poison which is not a toxin. In the case of the toxins which I have been studying, I would explain their lethal effects on the animal as follows: The toxic group of the cell has a special chemical affinity for a certain group of the body cells that control respiration. It does not destroy these cells, but throws a certain number of them out of commission, so to speak, and if this number be great enough, respiration ceases and the animal dies. However, careful tracing of the respiratory movements, before one commits himself positively to this theory, will be necessary. I can not resist the temptation of suggesting the possibility that a cell toxin leaves the nuclein group of the cell intact, while the cell poison breaks up this group, and consequently permanently destroys the cell and renders the formation of an antibody impossible.

When the toxin is introduced into the body the injured cell, by virtue of its chemical attraction, repairs its loss by splitting off from the nutritive substances within the range of its chemism groups of "m," and in doing this it splits off more "m's" than it can use, and the excess becomes the antitoxin of the blood serum. With this exception it is easily understood why the number of antitoxins that may be formed is practically unlimited in number and why each is specific. As group "e" in no two kinds of bacterial cells is identical, the group split off from the body cell will not be identical.

In concluding, I wish to express my high appreciation of Ehrlich's theory. In my opinion it is the most valuable theory ever presented to scientific medicine, and deserves to be ranked with the theory of gravitation and with that of ether, and I think that it is not too much to say that its author has done more to stimulate scientific research than any other man in the profession, and it is with much hesitation that I have suggested the modification of Ehrlich's theory set forth in this paper. The ideas which I have expressed have grown out of a study of Ehrlich's theory, and if there be in these ideas anything of a permanent value, I hope that they may be considered a tribute to his genius. While, on the other hand, if my suggestions prove to be without value, they can not, in any way, detract from the honor due him whom all workers in this line regard as the master.

The details of experimental work done in my laboratory along the lines of this paper will appear in later papers in THE JOURNAL.

DISCUSSION.

DR. JAMES J. TERRILL, Galveston, Tex.—If the cell were rotated and the "m" band as represented in Dr. Vaughan's diagram—if that cell is capable of replacing that "m" with, say, one, two or a hundred times, why is it not possible that the body which contains "e" (the colon bacillus, for instance, which still retains, according to this theory, its nucleus separate and intact)—why does not that have the power of replacing this "e" one, two, three and a hundred times, and therefore nothing be gained in this matter? I would like to put that question to Dr. Vaughan and hear his explanation of his theory.

DR. JOSEPH CLEMENTS, Nutley, N. J.—We have before us a great problem—that of infection and immunity. We have the facts, by the interpretation of which we are to solve this great problem, and these facts are of two kinds—first, the protoplasmic activities of the organism in which the infection or immunity is to obtain, then the other factors (which I may term the external factors), which are the so-called germs and toxins. Are we not looking too much at one end of this question? Are we not dealing too much with the external parts of the factors, to the exclusion, somewhat, of the other—the more important—part, which is the protoplasmic activities, so that we can not really and absolutely and correctly interpret the phenomena on this principle and this basis? We shall have to turn our attention a little more to the other side of it—to the protoplasmic activities of the organism in which this great problem is being worked out.

DR. HENRY SEWALL, Denver—If I have rightly understood my studies in immunity, the treatment of bacterial substances with hydrochloric acid is one of the means by which toxins are turned into toxoids. I would like to know if Dr. Vaughan's researches have not thrown some light on the essential difference between the toxin and the toxoid. It would seem as if the difference between poisonous activity and the production of immunity might be cleared up by such work as this.

DR. S. J. MELTZER, New York City—One of the constituent chemical groups of the colon bacillus was designated by Dr. Vaughan as hemolytic. These groups were obtained after the bacterial bodies were exposed to the chemical action of sulphuric acid. Hemolysis can be produced by many different methods. For instance, by osmosis, as in the hemolysis caused by water or any hypotonic solution; or by chemical actions, as in the effects of bile acids, etc.; or by biologic methods, as in the effects of alien serum. In the last case the hemolytic effect is not due to osmosis nor to any known chemical action; it is, so to say, a vital phenomenon. I wish to call attention to the difference between the hemolysis of the colon bacillus spoken of by Dr. Vaughan and the bacterial hemolysis spoken of by other bacteriologists. The hemolytic effect of the tetanus bacillus is a purely biologic phenomenon and is equal in its effect to that of alien serum, while the hemolytic effect of the profoundly disintegrated colon bacillus is apparently only of a chemical nature. Dr. Vaughan tells us that a colon bacillus is nothing but a chemical mechanism. It consists of six definite chemical groups, perhaps more, but the bacillus is nothing but a combination of these groups. We know that all living organisms contain a good many chemical groups. Does Dr. Vaughan mean to convey the view that the colon bacillus consists of nothing else but these chemical groups? Perhaps I misunderstood him. But if this is, indeed, his view, then I for one would not be converted to it until Dr. Vaughan, or someone else, succeeds in creating a colon bacillus by putting together all the constituent chemical groups without the aid of a living bacillus—were the creation only a very modest colonculus. Until then I will be grateful to Dr. Vaughan and other eminent chemists for establishing many more definite chemical groups as constituents of living organisms, but will stick to the belief that these organisms possess, beside the chemical groups, some other factor which for a great many years to come we will have to designate as vital.

DR. VICTOR C. VAUGHAN—I shall answer as best I may these questions. The one about the possibility of the colon bacillus rebuilding itself is an interesting and proper question. This is exactly what does happen when the bacillus grows in the body. In the animal that is not immune, the colon bacillus builds itself and continues to elaborate poison until it kills.

In regard to Dr. Meltzer's question, I may say that I am not trying to solve the problem of life. I am studying the material of which the colon bacillus is composed. The question of the origin of life is too big for me to undertake to discuss. I imagine that life is something more than matter, and, as stated before, I am simply discussing the material out of which the cell is built. I have used the term hemolysis, not in a biologic but in a chemical sense, and exactly as I understand it has been largely used by Ehrlich and all others working on this subject. I can precipitate the hemolysin, wash it free from other substances, put it into the blood and study its action. I have certain reasons for believing that there is a toxoid group in the colon cell. This point I have not gone into in the paper but hope to do so in a later communication. I have formulated the theory which I have offered because some theory is necessary in order to do systematic and scientific work.

DR. WINFIELD S. HALL, Chicago—I have been very deeply impressed with the character of this work which Dr. Vaughan and his associates in his department have been doing for a number of years, and I feel that this Section is very highly favored in receiving from Dr. Vaughan so clear a statement of the work that he has done and of the hypothesis on which he is working for future results. I can not help feeling that in this work he is really laying the foundation of a broad, scientific basis for the whole subject of toxins and of immunity and immunization. I believe that the discovery of diphtheria antitoxin was a chance discovery. Several of these discoveries have been made, but the relation of these individual toxins and antitoxins, the one to the other, has been purely hypothetical. I believe that the work of Professor Vaughan and his associates will result in clearing up this whole subject, now only hypothetical, and in giving to the world a science of immunization. I wish to offer a resolution, not of thanks, but of appreciation. Dr. Vaughan is not working for thanks; but appreciation helps along a little occasionally, and I move a vote of appreciation to Dr. Vaughan and his department for this epoch-making work that he is doing.

[The resolution was adopted by a unanimous vote.]

PRIMARY MALIGNANT ENDOTRACHEAL TUMOR.

PRELIMINARY REPORT.*

JUDSON DALAND, M.D.

Professor of Clinical Medicine at the Medico-Chirurgical College; Physician to the Medico-Chirurgical Hospital.

AND

JOSEPH McFARLAND, M.D.

Professor of Pathology and Bacteriology at the Medico-Chirurgical College.

PHILADELPHIA.

This case is of interest from not less than three standpoints: First, that of the physician, because of the importance and extreme difficulty of diagnosis; second, that of the surgeon, because the treatment is purely operative, and third, that of the pathologist, not only because of the rarity of malignant growths in this situation, but because of the histologic structure of this tumor. This paper is directed especially to the pathology.

Primary tumor of the trachea is exceedingly rare, and, according to Scheuer,[1] but 22 per cent. of these are primary malignant growths.

Sir Morell Mackenzie,[2] after sixteen years of experience, saw but four cases of tracheal tumor, and it is probable that but one or two of these were primary and malignant.

Only twenty-eight cases of this disease are reported, most of which were discovered at autopsy in Germany or Austria.

In 1882 Delafield[3] reported a case of primary carcinoma of the bronchi, which invaded the trachea to a very slight extent. A number of cases of secondary invasion of the trachea by laryngeal carcinoma have been reported. A careful search through American medical literature failed to disclose a case of primary malignant endotracheal tumor.

History.—The patient, a woman, aged 34, married, living in a malarial district, had always enjoyed good health until the present trouble began, although her husband, a physician, observed that she had been rather pale during the past year or two.

In the summer of 1903 a slight cough began, uninfluenced by treatment, and in August dyspnea and expectoration were superadded. The sputum was thick, tenacious, blood-stained and mucopurulent, reaction neutral, and showed, microscopically, squamous epithelium, blood, diplococci, staphylococci, streptococci, but no pneumococci, tubercle bacilli nor yellow elastic tissue. A second examination gave similar results and the quantity for twenty-four hours was 400 c.c. There was no fever and these symptoms gradually increased in severity until Nov. 27, 1903, when she was seen for the first time.

General Examination.—The dyspnea was extreme, of the inspiratory type like that observed in laryngeal obstruction. Each inspiration was prolonged, labored and accompanied by insinking of the supraclavicular and infraclavicular fossæ and retraction of the base of the thorax. The rate of respiration and pulse was usually about normal.

The constant struggle for breath, interrupted by frequent paroxysms of coughing, caused sleeplessness and exhaustion. A few bronchitic râles were heard over both lungs, otherwise the examination of thoracic and abdominal contents and urine was negative.

Laryngoscopic Examination.—This examination, which was rendered extremely difficult by the dyspnea and paralysis of the right vocal cord, showed a swelling in the lower portion of the trachea, the surface of which was the same color as the tracheal mucous membrane. This swelling was erroneously interpreted as indicating external pressure on the walls of the windpipe. Two fluoroscopic and skiagraphic examinations gave negative results. As an absolute diagnosis was impossible, a probable diagnosis was made of a tumor, possibly aneurismal, pressing on the trachea in the region of the innominate artery. An exploratory operation was advised, but was declined by the patient. (The autopsy demonstrated that this probable diagnosis was erroneous.) The prognosis was absolutely unfavorable.

Death.—A few weeks later aspiration bronchopneumonia occurred, accompanied by a fever ranging from 101.2 to 103.8 degrees F., which disappeared on the ninth day. Suffocation and exhaustion, preceded by deep cyanosis, caused death on Jan. 1, 1904, seven months after the onset of the first symptoms.

Autopsy.—The autopsy was performed ten hours after death. The brain and spinal cord were not examined, and there was no thoracic aneurism nor tumor. With the exception of a tracheal bronchitis, the examination of the thoracic and abdominal contents revealed nothing of importance.

At or about the lower third of the anterior wall of the trachea was a papillomatous tumor about the size of the distal phalanx of an adult finger, which extended almost to the bifurcation of the trachea and measuring 5x3½ cm. This tumor caused extreme stenosis and occupied more than three-fourths of the lumen of the tube.

Immediately beneath this growth were a few moderately enlarged glands about the size of a marrowfat pea, which were firmly adherent to the outer wall of the windpipe. This region corresponds to the place where the innominate artery

* Read at the Fifty-fifth Annual Session of the American Medical Association, in the Section on Pathology and Physiology, and approved for publication by the Executive Committee: Drs. V. C. Vaughan, Frank B. Wynn and Joseph McFarland.

1. Ueber tracheal Tumoren. Inaug. Diss., Muchen, 1893.

2. H. Crutchley: London Lancet, 1884, vol. ii, p. 822.

3. New York Med. Jour. and Obst. Rev., 1882, p. 406.

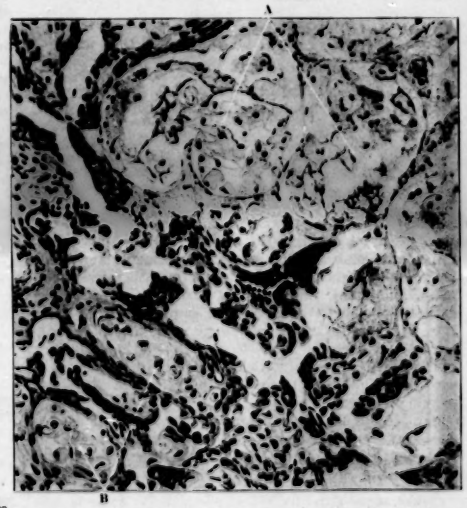
comes in close relation with the trachea, at which point the recurrent laryngeal nerve was compressed by the enlarged glands and inflammatory exudate.

PATHOLOGIC EXAMINATION BY DR. JOSEPH McFARLAND.

Macroscopic Examination.—The specimens submitted for examination consisted of the larynx, trachea, the upper extremities of the bronchial tubes, with the adjacent lymphatic glands and tissues of the roots of the lungs. The trachea was opened posteriorly so as to reveal on the anterior wall midway between the cricoid cartilage and bifurcation a fairly well circumscribed neoplasm. This formed for the most part a somewhat flattened, tabular swelling, whose greatest diameter was about 5 cm. and least diameter about 3½ cm. The surface appeared villous when the specimen was first examined in physiologic salt solution, but became slightly roughened

Trachea cut open longitudinally, showing the tumor just above the bifurcation. Its originally villous character has been lost through the action of the preserving reagents. The color corresponded exactly with that of the tracheal mucous membrane. (About natural size.) A, The tumor; B, lymphatic nodes of which two were infiltrated.

Section through the superficial portion of the tumor showing the villous connective tissue prolongations (A), the nests of cells (B) and a peculiar cornified cell (C). (×400.)



Section through the base of the tumor showing the disorganizing mucous glands (A) in the upper right-hand half of the drawing, and the squamous epithelium composing the tumor itself in the lower left-hand half of the drawing. (×500.) Nests of squamous cells (B).

after having been placed for exhibition in Zenker's solution.

The tumor had the same pinkish color as the mucous membrane of the trachea. There seemed to be no ulceration, the right half of the tumor, consisting of two fairly good-sized nodes, must have considerably obstructed the lumen of the tube during life. The borders of the growth were, therefore, slightly elevated and differentiated from the normal tissue. When a section of the tumor and tracheal wall was made, it was found that its extension into the substance of the trachea was accompanied by loss of substance, that the cartilage rings of the organ had disappeared and that its wall had been reduced to the layer of connective tissue. The lymphatic nodes about the bifurcation of the tumor were slightly enlarged, and one at least presented small nodes as if from secondary invasion by the tumor, and on microscopic examination this was found to be correct. The nodes thus invaded were immediately beyond the tumor and were adherent to the trachea wall. A portion of the esophagus, fortunately that part underlying the tumor, had been removed together with the trachea, and when opened showed no abnormality. There seemed to be no connection whatever between the neoplasm of the trachea and the tissues of the esophagus.

Microscopic Examination.—Examination of the microscopic section with the hand lens showed that the cartilaginous rings of the trachea were not completely destroyed beneath the tumor, but that the tumor invaded the trachea wall between the cartilaginous rings and partly surrounded them. Under the microscope the entire structure of the mucous membrane was disturbed by the neoplasm. In the lower layers of the mass were found mucous glands not showing any marked departure from the normal, but these glands seemed to extend upwards into the tumor mass, and as one followed them in this direction their cells became more and more degenerated until rounded openings devoid of cells were occasionally observed.

From the connective tissue of the tracheal wall prolongations extended inward, branching so as to have a dendritic appearance. These were covered by layers of epithelial cells of a peculiar flattened spindle shape, the superficial layers of which were in process of active desquamation. In the depths of the tumor this desquamation caused the spaces between the dendritic outgrowths to be filled with a seminecrotic mass of desquamated cells. The interspaces between closely approximated villi not infrequently contained cells massed together in a manner suggestive of the epithelial pearls of the common forms of squamous epithelioma. In these cells various peculiar inclusions may be observed. The cells on the terminal branches of the villi desquamate singly and in masses, so that the surface of the tumor presents a very much frayed appearance.

As has already been suggested, the invasive nature of the tumor was shown by the metastatic growths in the adjacent lymph nodes, in one of which there was a nodule ½ c. in diameter, distinctly circumscribed and corresponding in all its histologic details with the primary growth. The situation of the tumor, the peculiarity of the cells of which it was composed, the partial cornification of the cells, suggest that the tumor had developed from an inclusion of esophageal epithelium in the wall of the trachea during embryonal life, and we are lead to believe that this is the true explanation of the origin of the growth.

The Word Neurasthenia.—The *Lancet*, April 30, begins an editorial article as follows: "Invented by Beard, of America, in the 'sixties' to describe and to include a class of nervous affections more common in America than elsewhere, the term 'neurasthenia' has been used with great elasticity," etc. It is true that we owe much of our knowledge of neurasthenia to the late Dr. Beard, but he did not invent the word, says the (N. Y.) *Medical Record*. Old Ludwig Kraus defined it in his "Kritisch-etymologisches medicinisches Lexikon," the third edition of which was published in Göttingen in 1844, long before Beard dealt with the subject.

REGENERATIVE CHANGES IN CIRRHOSIS OF THE LIVER.*

W. G. MACCALLUM, M.D.
Associate Professor of Pathology in Johns Hopkins University.
BALTIMORE.

In the literature and in the text-books of pathology little reference is made to the evidences of regeneration in cirrhosis of the liver. It is true that it is stated that regenerative changes are evident in certain cases leading to the production of adenoma-like nodular masses of liver tissue, and there is in general a tendency to regard the bile duct-like structures which occur in the fibrous bands as newly formed and as representing an effort toward the restitution of the liver to its original bulk. Especial stress is, however, usually laid on the degenerative changes in the liver cells and the anatomic picture presented by a cirrhotic liver is commonly looked on as the expression of a steadily progressive destructive process.

Kretz[1] only, so far as I can see in the literature at my command, has especially emphasized the importance of the regenerative changes in the ordinary type of cirrhosis and the fact that the anatomic condition as found at autopsy is probably the product of numerous attacks of some destructive affection from which the liver has more or less completely recovered. He discusses these changes briefly in a variety of conditions in an earlier paper, and in his later communication speaks particularly of the disturbed anatomic arrangement of the liver tissues in cases of advanced cirrhosis and of the consequent obstruction to the circulation. His attention is particularly attracted to the masses of liver tissue which he thinks are no longer to be regarded as acini since they have lost the typical architecture of the acini and the typical relation to the blood vessels. He states that many of these nodules are without central veins—others have central veins at their edges, while within the nodule the capillaries are so distorted that injections through the portal vein pass more readily to the hepatic veins by way of the fibrous tissue than through their substance, and even that the blood from these masses reaches the central vein by way of the fibrous strands. He regards these isolated masses of liver tissue as largely new formed and defines cirrhosis as essentially a combination of focal or localized recurring chronic degenerative processes with regeneration.

All of the studies of regeneration in cirrhosis are based on the experimental work of Ponfick, Podwyssozki, von Meister and others, and the anatomic observations of Marchand, Meder, Stroebe, Barbacci and others who have investigated the late results of those destructive processes loosely classed under the name "Acute Yellow Atrophy of the Liver," in which conditions for the study of regeneration almost identical with those produced experimentally are presented.

It is well established, as I have also pointed out in a previous paper,[2] that in those cases in which, after extensive destruction of the liver substance, the individual survives for a considerable time, not only is the débris of the necrotic liver substance removed and scar tissue

* Read at the Fifty-fifth Annual Session of the American Medical Association, in the Section on Pathology and Physiology, and approved for publication by the Executive Committee: Drs. V. C. Vaughan, Frank B. Wynn and Joseph McFarland.

1. Kretz: Ueber Lebercirrhose, Wiener klin. Woch., 1900, vol. xiii, p. 271.

2. W. G. MacCallum: Regenerative Changes in the Liver After Acute Yellow Atrophy, Johns Hopkins Hospital Reports, 1903, vol. x.

formed throughout the skeleton of the liver thus left without cells, but the specific elements which remain evince an extraordinary power of reproducing themselves, tending by this hyperplasia to replace the lost tissue. This repair takes place according to Marchand in three ways:

1. By hyperplastic proliferation of the larger intact remains of the gland parenchyma.

2. By proliferation of isolated liver cell clumps or remains in the region of the most intense destruction.

3. By proliferation of the interacinous gall ducts which, in conjunction with the latter, form new liver cell strands.

Of the cell tubules making up the last group he says elsewhere that they are by no means to be considered as atrophic rows of liver cells, but are doubtless new formed. In their production not only the small interacinous ducts, but also those liver cells which have escaped destruction in the acinus, take part. While the first grow from the periphery into the loose meshwork of the acinus, the isolated liver cells in proliferating provide them with new formative material.

In the case reported by me it was possible to support these views in their entirety, with perhaps the exception of the last point. That this process of the combination of sprouting bile ducts with proliferating isolated liver cells could not be seen, was doubtless due to the fact that in that particular case in the area of most intense cell destruction all the cells of the acini were destroyed or so far degenerated that they were incapable of any participation in the regenerative process, and regeneration necessarily resulted from a proliferation of the bile ducts alone. I regret, therefore, that my statement should have been regarded by Professor Marchand as an opposition to his views,[3] since it was merely intended to describe the conditions in a special case.

I have there expressed the view that whenever the highly differentiated liver cells remain, the regeneration is simply enough effected by their proliferation. Where, however, they are all destroyed the less highly differentiated but genetically identical cells of the bile ducts proliferate and subsequently become specialized in form and function until they are indistinguishable from liver cells. To what extent, then, can these principles be shown to be active in cases of cirrhosis?

The material at my disposal consists of those cases of cirrhosis of the liver which were found in the series of 2,300 autopsies which were performed at the Johns Hopkins Hospital, together with a few miscellaneous cases from other sources, in all sixty cases. For the present, instances of cirrhotic changes in connection with chronic passive congestion, tuberculosis, syphilis, tumors, abscesses, etc., have been left out of consideration.

The general anatomy of the cirrhotic liver is so universally well known that I need not dwell on it here. The difficulty of making a sharp distinction on purely anatomic and histologic grounds between the generally established classes of atrophic cirrhosis, hypertrophic cirrhosis, etc., is also well recognized, and the clearing up of the processes under discussion may throw some light on it.

Kretz claims that a source of confusion in the study of cirrhosis of the liver lies in the tendency to explain the nodular masses which occur there on the basis of the normal acinus, whereas they are very different, the difference being largely in the loss of their central veins, a process for which he offers no satisfactory explanation.

These nodules vary greatly in size, sometimes forming masses which project above the surface of the liver or stand out sharply on the cut surface, distinct in color and consistence from the surrounding tissue. It is to these very large nodules that reference is especially often made in connection with hyperplastic and regenerative changes in cirrhosis. Often they are composed of very large masses of liver tissue with central vein and radially arranged cell strands in every way like a magnified liver lobule. In other cases, however, they are masses of numerous lobules or portions of lobules, no one of which very greatly exceeds the normal lobule in size. As we proceed to the smaller and smaller nodules there are fewer masses which resemble a complete acinus. Many consist of masses of somewhat atypically arranged cells in which no central vein can be seen. Of course these may be explained as lobules cut tangentially. Others have the central vein situated near to one side or even at the extreme margin, or sometimes one may recognize the central vein embedded in loose connective tissue at a slight distance from the edge of the nodule.

Here the question arises as to what we are to consider the true normal form of the lobule or acinus. Obviously on embryologic grounds the lobule should be the mass of tissue which is drained by the ultimate branch of the bile duct, but mainly on account of the peculiar abundance of connective tissue in the liver of the pig which outlines lobular masses, the highly irrational plan of adopting the efferent vein as the center and index of the position of the lobule has become firmly established. This, however, is justified by the very distinct demarcation of such masses of tissue and by the fact that these masses do behave more or less as individual structures under the stress of circulatory disturbances, etc. If now we inject the hepatic vein with colored celloidin and then clear up or corrode the preparation, it will be found that the vein branches very profusely and at the periphery of the liver there are even found anastomoses between the adjacent branches. Reconstructions of such a liver now show that the lobules are by no means isolated, rounded, cylindrical or polyhedral masses with a single central vein, but that the liver tissue really forms a sort of thick mantle for the hepatic vein and its branches interrupted when the vein becomes too large by the approach of another similar mass (Mall). Thus a lobule has a very complicated outline and the areas of tissue which are usually regarded as cross-sections of the acinus are in reality cross-sections of a branch only of the coherent mass which in its entirety answers to the definition of the lobule in this somewhat broader conception. This, as is readily seen, is not fundamentally different from the current idea, but it is of interest in explaining some of the relations seen in cirrhosis. It is also true that in many of the acini there are side branches of the central veins, about which the liver cells are radially arranged, but which do not thereby produce much disturbance of the general outline of the lobule; with the increase of their surrounding liver cells such a system would probably constitute a branch of the lobule.

One may readily convince oneself of the truth of the statement which has been repeatedly made, that in cirrhosis of the liver there may be masses of liver cells as large in cross-section as the branches of the normal acini, which have no central vein and the cells of which are arranged in more or less parallel rows, but not radially, about such a point. Other such masses are found in which a central vein is visible eccentrically placed, sometimes even at the very margin of the mass. Some-

3. Ferzina: Inaug. Diss., Leipsic, 1903.

times one can see what appears to be a central vein in the connective tissue adjacent to the mass of liver cells. Unfortunately I have had no opportunity as yet to inject the hepatic vein in an advanced case of cirrhosis of the liver; by such a method one would be able to recognize easily all the relations of such branches as had not been obliterated.

In the study of the changes after acute yellow atrophy or other destruction of a large part of the liver tissue referred to above, it was easy to reach an obvious explanation of these relations. In some instances the lobules were intact, and then after the hyperplastic process has run its course large symmetrical lobules resulted with the central vein in its normal relations. Of other lobules half of the tissue was destroyed, only the skeleton of the connective tissue remaining from the other half. From such, large masses were produced with the central vein at one margin. In case only a sector of the lobule remained there ensued the formation of a larger wedge-shaped mass with the central vein at the point of the wedge. Finally, at any given level, all the cells of the lobule might be destroyed except a group originally situated toward the periphery. Then there would arise the enlargement of this mass into a mass of irregular form, the original central vein of which might be situated at some distance in the connective tissue skeleton. Now, as this skeleton usually collapses to a great extent and becomes overgrown with scar tissue, the central vein may become very inconspicuous or even completely obliterated, and hence the appearance of lobules or nodular masses without any central vein.

Precisely this process can be demonstrated in most instances of cirrhosis of the liver, more easily and plainly in the coarsely nodular forms than in the finely granular or smooth cirrhotic livers.

To form a clear idea of the conditions which result from such a process, single sections of the liver will not suffice. The nodules, which appear to be entirely isolated masses of liver cells in a single section, usually prove in serial sections to be merely the outlying spurs of other ramifying, irregular conglomerates. Really isolated groups of cells do occur, but are relatively rare.

From the study of serial sections one gains the idea that instead of the normal, smoothly outlined, branching acini, we have here acinoid masses with extremely irregular gnawed-out outlines, the erosions being often so deep as to expose on many sides the branching central vein or even so deep as to completely cut off portions of the lobule.

Were the process to stop there this explanation would be much more evident than it is; on the contrary, regenerative hyperplastic changes occur in these injured lobules so as to restore to a great extent their rounded outlines and to bring them back to their original bulk or even to a bulk greater than that of the original lobule. This occurs expansively in the remains of the liver tissue, and although if one were to model such a mass it might in outline roughly resemble the model of a normal acinus, the introduction into the model of the central vein would at once show what an extremely irregular eccentric structure such a rehabilitated lobule really is. Instead of the branching central vein with its uniform mantle of liver cells we would find the vein quite exposed in places, surrounded by cells in other places, and in still other places large, irregular clumps of cells might be applied to one side of it or throughout some distance be separated from it entirely.

Reconstructions from hardened livers without any injection of the hepatic veins are, therefore, of relatively little value, but when a suitable case presents itself it will be possible to illustrate this point very graphically by means of a proper wax model.

The radial measurement of these nodules must also afford an indication of the increase in size over the normal. This could be effected best by the measurement of such a model as mentioned above in which one could be sure of measuring the line at right angles to the central vein where the lobule has its greatest radius. Only the extreme measurements would be of value, for elsewhere one could not be sure whether he were dealing with the original thickness of the lobule or with the thickness resulting from primary atrophy and secondary hypertrophy. The extreme measurements found in serial sections, however, where one is careful to measure the real radius (not an oblique radius) at its greatest length, will practically correspond with this, and while it must vary greatly in different cases (being often greatest in the cirrhosis of children, which is notoriously coarsely granular owing to the active power of regeneration in children), it will at least prove that enlargement has occurred. So, for example, while the average radius of the lobule (i. e., thickness of the mantle of cells about the central vein) in a number of normal livers was found to be about .66 mm., acini were found in advanced cases of cirrhosis which measured from central vein to periphery, 1.00 mm. or more.

Positive evidence of hyperplasia are abundantly present in these acini. Cirrhosis is, of course, a chronic process of long duration, so that it is not surprising that in most cases mitoses are seldom seen. From the study of the early stages, however, it is seen that mitosis is then extraordinarily abundant in the liver cells and that it occurs as an almost immediate sequence of the destruction of the rest of the liver cells. Such necroses destroying a portion of lobule occur, as is well known, and as Dr. Opie has recently emphasized, as the result of a great variety of infections and toxic processes, and in one such case at least which Dr. Opie has brought to my notice I was able to find numerous karyokinetic figures in the peripheral parts of the lobule, while the cells of the central part, although necrotic and devoid of nuclei, were still present in almost their normal position and arrangement.

Similarly, in another case, which I must regard as an early stage in the production of cirrhosis of the liver, the cells throughout the remnant of the lobule, even after a certain amount of scar tissue had been formed in the periphery, were in a state of active division.

Ponfick showed, as has been mentioned in the previous paper referred to, that although mitoses were abundant in the early stages after the extirpation of portions of the liver, they were represented in the later stages only by such conditions as are almost constantly seen in cirrhosis and in the regenerating liver after acute yellow atrophy, i. e., the presence of two or more nuclei in a single swollen cell, the occurrence of large, clear cells with convex outline, etc. Further, one may frequently observe side by side in such a mass, cells which retain the usual form and sometimes deep pigmentation, and cells which are much larger and plumper and are relatively free from pigment. These latter may even form masses of thick columns so arranged in a rounded form as to compress by their expansile growth the neighboring non-proliferating liver cells. One can scarcely escape the conclusion that these are new formed cells.

If now we turn from the recognizable liver tissue to

the remaining tissue we find conditions about which there is perhaps more ground for controversy. As to the significance of the fibrous tissue there has been much discussion, but the weight of opinion is now against the idea that it constitutes a primary new growth of connective tissue which by its contraction compresses the liver tissue and causes the destruction of that tissue, which is apparent in any advanced cirrhosis. Briefly, examination of a section of almost any advanced coarsely granular cirrhosis will show at once that part of the connective tissue is the pre-existing fibrous skeleton of the liver, for it is frequently easy to make out the collapsed framework of the lobule from which the liver cells have been destroyed and eliminated; part of it is the tissue which originally surrounded the vessels and bile ducts and part of it is new formed in the sense that a scar appears to take the place of more highly specialized tissue which has been destroyed. That this scar may by its later contraction constrict the highly specialized elements that are enclosed within it can not be denied. Beside these things which we have described there are the bile ducts and bile duct-like structures whose rôle in cirrhosis has given rise to the most active discussion. The literature on this question has been so well reviewed by Meder and others who have considered the similar or identical structures in connection with the regenerative processes following acute yellow atrophy, that it is not necessary to repeat it here. It may be well, however, to review briefly the anatomic conditions as exhibited by our series of cases.

It has been shown that the disturbance in the structure of the liver indicates that a destructive process, affecting chiefly the peripheries of the lobules, but sometimes extending so deep as to involve the whole diameter, leaves behind it a collapsed skeleton which soon becomes almost indistinguishable from the pre-existing connective tissue about the portal spaces and which, with the coincident growth of new scar tissue, is quite merged into the wide bands of fibrous tissue which run through the liver. This in itself would bring about a concentration of the pre-existent bile ducts on the disappearance or collapse of the liver lobules. The bile duct-like structures sometimes present only in small numbers, sometimes very abundant, lie for the most part in this tissue, and it is naturally of interest to us to know whether they lie in the skeleton of the old lobule or not. Since, however, the greater part of the fibrous tissue coincides with this, or is new formed, we may regard this relation as very close. The point of dispute is, therefore, whether the structures are to be interpreted as compressed or otherwise modified liver cells undergoing a retrogressive process, i. e., the remains of the injured constituents of the lobule, or as newly-formed strands arising from the bile ducts, or possibly as a combination.

Now the condition actually found is about as follows: Where the lobule is relatively intact there are relatively few bile duct-like structures at its margin communicating with the liver cell strands, as in the normal liver. Where the erosion or dismantling of the lobule has been extensive there is a wider strand of fibrous tissue and the bile duct-like channels are numerous; and one may distinguish the main bile ducts, which are unmistakable, and are lined with cylindrical epithelium. Many of these are obviously elongated and even spirally twisted and branched. Beside these there are smaller channels with narrow lumen and a lining of cubical or flattened cells. These, too, branch and sometimes anastomose and many of them are continuous with the liver cells of the adjacent side of the lobule. When the destruction of the lobules has been very widespread and the fibrous band is very wide, it is frequently found that no such connection takes place, but another change is substituted, which will be described later.

It is perfectly conceivable, therefore, that the portions of these strands in connection with the liver cells for such a distance as would correspond with the remainder of the radius of the old lobule, may represent compressed or modified liver cells, and it is not possible to bring absolute proof in all cases that this is not so. Frequently, however, the ducts are very much longer than could be accounted for in this way, and it will be decisive in this regard to search for evidence as to whether their cells are in a stage of degeneration or retrogression, or in a condition of progression or proliferation. Sometimes the strands of fibrous tissue are so narrow and the ducts so short that this latter point alone could yield a decision.

In a case which presented itself recently at the Johns Hopkins Hospital the state of the liver seems to throw some light on the process.

CASE 1.—Autopsy, 1829. This was the case of a man who died after a brief illness, in which icterus, delirium, etc., were prominent symptoms. The liver was pale greenish-yellow in color, quite smooth, and on section showed the lobules very distinctly as slightly prominent, rather opaque, greenish-yellow masses. The consistence of the liver was slightly increased, but there was, macroscopically, no distortion of its structure. Microscopically, there was found to be a slight irregularity in the form of the lobules, with a moderate increase in the periportal connective tissue. The liver cells in the lobules were not homogeneous in appearance, but some, chiefly the more peripheral, were greatly enlarged and so loaded with fat that the protoplasm appeared as a delicate web. The nuclei were all well preserved. The remaining cells were small and flattened, and frequently arranged in double rows so as to present a rather wide lumen. Their protoplasm stained rather deeply and was not granular to the degree seen in the normal liver. In both of these types of cells abundant mitotic figures could be seen. In the connective tissue strands, but continuous with the liver cells, there were numerous ducts, readily distinguishable from the duct-like strands of liver cells in the lobule. In these, numerous mitotic figures were found. The bile ducts proper were not especially altered, but occasionally mitoses were found in their cylindrical cells.

In this case, with the typical formation of bile duct-like strands in the connective tissue, it is clearly seen that these structures are by no means degenerative in character, but are due to an active production of new cells by an intercalated mitosis. In the advanced cases of cirrhosis such distinct evidence of proliferation of the cells of the ducts is usually not to be found, but the great length and tortuous branching which often characterizes them, and the good state of preservation of their cells makes it practically certain, in the light of this case and of the cases of regeneration after acute yellow atrophy, that they are due to a proliferative process. Their lack of resemblance to the elongated red staining cells so familiar as the result of compression of the liver by tumors or abscesses need scarcely be mentioned.

While these strands must be regarded as progressive in character we can not be sure that they are exclusively derived from the bile ducts. Where the case can be observed in the early stage, as in the one described, the continuity of the duct with the liver cells is often to be made out, and even when this continuity is broken through, as it must be in most instances, no greater difficulty in the reinstatement of the continuity need be anticipated than in the fusion of the edges of proliferat-

ing epithelium which approach one another to heal over an ulcer in the intestine or a wound in the skin.

In the case described above there was, further, the modification in the liver cell strands, which produce an appearance something like that of the bile ducts, but since these cells were in active mitosis they could not be compressed or degenerating. On the contrary, it seems probable that they should be regarded as a reversion to a less highly specialized and temporarily nonfunctional form for purposes of reproduction, and in all probability in a later stage such cells would have regained the ordinary appearance of liver cells. A similar modification in the liver cells was pointed out to me by Dr. Opie in another case, in which, as a result of appendicitis with generalized acute peritonitis, there was widespread necrosis of the central portions of the lobules. In this case, in which death occurred so soon that the necrotic cells were all in their original position, many strands of the intact liver cells within the lobule had assumed the form described in the other case, although there was nowhere any proliferation of connective tissue and I was able to find abundant mitotic figures among these intact cells of the lobule.

Thus, while we can not say absolutely that the injured liver cells in a compressed state do not constitute some part of the duct-like strands found so abundantly in the wider bands of fibrous tissue, the weight of evidence is entirely in favor of the idea that these are the result of intercalary proliferation by mitosis in the bile ducts or, perhaps, in peripheral portions of the liver cell strands which remain in continuity with the pre-existing bile duct. Where the liver cell strands are interrupted or destroyed, partial or complete collapse of that portion of the lobule results, but whatever cells are left in the direction of the large bile duct proliferate and reinstate, if possible, the connection with whatever cells remain in the lobule. If liver cells are left in connection with the duct they proliferate with the same end in view.

This brings us to another point, perhaps the most important, in showing this proliferative power of the bile ducts in the older cases of cirrhosis. Often the connection with the liver cells is not reinstated and the bile ducts are left ending blindly in the connective tissue. Such ducts may often be shown to give rise to isolated bulbous masses of cells which gradually acquire the characteristics of highly specialized liver cells. That they are newly formed is shown by their form, their fresh appearance, and by the lack of pigment frequently found in the adjacent old liver cells. Further, it is interesting to note that one may be certain that they are actually formed from the bile duct epithelium and not merely isolated from the neighboring lobule by the fact that specialized pink-staining liver cells may be found not only in the bulbous extremity, but also intercalated singly among the ordinary cells of the ducts. These are, therefore, in every way like the bulbous sprouts which are described in the case of regeneration after acute yellow atrophy, and indicate very clearly not only that the so-called newly formed bile ducts really are newly formed bile ducts and not compressed liver cells, but that they possess a very considerable power of producing new liver tissue.

All of these processes taken together show that we must regard the cells of the bile ducts and the liver cells as identical and equivalent as far as regeneration is concerned, and that while the liver cells are specialized for functional purposes, they are perhaps a little more ready but no more potent in the reproduction of new liver cells than the epithelium of the bile ducts. It is, therefore, of little moment to determine whether doubtful cells are liver cells or bile duct cells, the essential point in this study is the proof that these cells are proliferating and not degenerating.

Of the degenerative changes which are in progress throughout the cells of the lobules and of the inflammatory reaction so frequently seen in the intervening tissues I shall not speak. Nor of the somewhat unsatisfactory classification of the forms of cirrhosis on anatomic grounds, although the idea is of interest that the difference between the hypertrophic or intralobular form of cirrhosis and the annular atrophic or portal cirrhosis lies in the distribution of the necrotizing process which affects the liver cells and which, as Dr. Opie has recently emphasized, depends so largely on the circulation of the lobule.

CONCLUSIONS.

In conclusion we may state that in the ordinary type of interlobular cirrhosis there is a primary destructive process leading to the disappearance of portions of the cell mantle surrounding the central vein of each lobule. The framework of the lobule persists but usually collapses, and there is produced an irregular lobular mass in which the central vein is in places left more thinly covered by the radial strands of liver cells, or even completely exposed and surrounded only by the connective tissue framework. The remaining liver cells proliferate rapidly by mitosis and generally increase the size of the portion of the lobule which is left. In this process they sometimes assume temporarily almost the form of bile duct cells. The connective tissue bands which run through the liver and separate these irregular hypertrophied remains of lobules consist of pre-existing connective tissue together with some which is newly formed. Numerous bile duct-like canals course through these bands and it is thought that these are produced by proliferation from the pre-existing bile ducts. The degeneration of compression of liver cells in the production of this appearance is not thought to be of importance. That the canals are composed of proliferating cells is shown by reference to a fresh case in which mitoses were abundant in their walls and by the fact that they frequently sprout out to form isolated bulbous masses of new liver cells. The bile duct epithelium and the liver cells are shown throughout these processes to be equivalent so far as the regeneration of the liver tissue is concerned.

The anatomic picture presented by a cirrhotic liver is, therefore, usually one in which the regenerative processes are the most striking, the destructive process being sometimes evident, sometimes entirely past and represented only by the widespread scars.

Cirrhosis of the liver may be defined as a chronic disease in which destructive processes, probably often repeated, result in a loss of the functional liver tissue immediately followed by the formation of a scar, the healing process, and later by an attempt at the restitution of the liver to normal by regenerative processes.

DISCUSSION.

DR. FELIX ADLER, New York City—At a very early stage in the experimental cirrhosis of the liver is seen the proliferation going on in the interior of the bile ducts—larger bile ducts, common smaller bile ducts down to the very minute ones—where no liver cells could possibly go. The proliferation of epithelium is followed by the widening out and distortion of the basilar membrane and finally the sprouting into branches. This occurs at a very early stage, for in-

stance, in that form of experimental cirrhosis which can be induced by the feeding of tobacco, and it bears out Dr. MacCallum's theory very thoroughly that at so early a time, when the cirrhotic condition—when the affection of the interstitial tissue—is progressing and is at a very early stage, the bile ducts begin to sprout and proliferate.

DR. E. LIBMAN, New York City—Some years ago I saw the liver of a child supposed to be suffering either from sepsis or hypertrophic cirrhosis, with fever; the entire period of observation only extended (so far as could be determined) over four or five weeks; and it turned out, at the postmortem, to be a case of sepsis, with abscesses of the kidneys. It was interesting to know that in that liver there were in five weeks an increase in connective tissue, and many of the changes which Dr. MacCallum has pointed out; it is particularly interesting because Dr. MacCallum mentions that the changes can come early.

DR. JOSEPH MCFARLAND, Philadelphia—Did I understand Dr. MacCallum to say that he thought the changes in cirrhosis of the liver were primarily necrotic and secondarily productive, or the reverse?

DR. WALTER L. BIERRING, Iowa City—It would seem to me that we might include in these regenerative changes, referred to in connection with cirrhosis, also that condition known as cirrhosis carcinomatosis, which is a sort of adenomatous hyperplasia taking place in a cirrhotic liver. There is a definite new growth of cells which resemble hepatic glandular cells, and frequently take on an atypical growth, subsequently undergoing a certain necrosis or fatty degenerative change and presenting to the naked eye yellowish-white or softened areas in the cirrhotic tissue. The term "carcinoma in cirrhosis" or cirrhosis carcinomatosis is usually applied to this regenerative process.

DR. W. G. MACCALLUM—Although I have not paid special attention to the forms of cirrhosis resulting from biliary obstruction, the anatomic conditions in those cases which occurred in our series have been practically the same, with the exception of the addition of the continued inflammation about the bile ducts. The hypertrophic or intralobular cirrhosis may perhaps be explained in the same way, excepting that there the cell's destruction has occurred diffusely throughout the lobule, leaving scattered cells from which regeneration occurs. In answer to Dr. McFarland's question I feel quite convinced that cirrhosis of the liver is not due to a primary growth of connective issue; we must, with Ackermann, regard the cirrhotic liver as a condition in which a primary destruction of the liver cells has been followed by scar formation. Dr. Adler's observations seem to me to correspond very closely with what I was able to observe in the case of which I have spoken as an early stage of cirrhosis, and in which in the delicate bands of fibrous tissue new bile ducts in the form that Dr. Adler has described, were found. With reference to Dr. Bierring's remarks I may refer to the paper of one of our students' wherein was expressed the idea, really suggested at first by Weigert, that in all probability the cirrhosis of the liver had been the result of destructive and degenerative changes, of healing, and of a subsequent regenerative process, which in Weigert's phrase had overstepped the mark and had gone on to the formation of a true tumor which could produce metastases. I have been particularly interested in the early appearance of these regenerative changes to which Dr. Libman refers. The necrotic liver cells may still be present where abundant mitoses in the intact cells are visible. Quite the same thing I think must be familiar to you all in the cases of acute nephritis in which the destruction of many epithelial cells stimulates the production of mitotic figures in those that are left, while, although regenerative changes are certainly present in the chronic nephritis, one is no longer able to find mitotic figures in such kidneys.

1. Catherine Travis: Johns Hopkins Hospital Bulletin, vol. xiii, 1902, p. 108.

Bartholin's glands are named for Thomas Bartholin, a Danish physician, who was born at Copenhagen in 1619 and who died in 1680.

HEART DISEASE AS AN OBSTETRIC COMPLICATION.*

C. S. BACON, M.D.
CHICAGO.

For many years heart disease has been recognized as an important disturbing complication of pregnancy, labor and the puerperium, while on the other hand, careful attention has been directed to the deleterious influences of pregnancy, labor, etc., in the causation of heart disease. This subject has furnished several interesting pathologic questions that are not yet solved, and some questions of management are not yet agreed on. I do not hope to add new facts, but especially to direct attention to a few points in the management of this complication that are somewhat frequently overlooked.

The term heart disease is a broad one, and of course embraces many different pathologic conditions. It might be of advantage to separately consider some of these different conditions, and especially to distinguish between diseases of the myocardium and those of the endocardium. However, in a general paper, we may adopt the usual custom of considering together all these conditions.

Heart disease may arise and develop during the pregnant or puerperal state, and be due to it, or it may have existed previous to pregnancy, and influence the course of pregnancy or labor, or be itself influenced by them. An example long recognized of heart disease arising during the puerperium is furnished by cases of endocarditis resulting from puerperal infection. Another condition less known is that of myocarditis resulting from the toxemia of pregnancy. A parenchymatous degeneration of the myocardium is a common and characteristic finding in postmortem examinations of women dying of gravidal or puerperal eclampsia. Careful study of the heart and circulation during an attack of eclampsia confirms the belief that myocardial degeneration is a common condition in eclampsia, and also probably in the large number of cases of eclamptogenic intoxication when convulsions do not supervene. The lesion is of all degrees of severity from a slight cloudy swelling to a very serious fatty degeneration. Corresponding to the anatomic changes the symptoms are from those of a slight disturbance of the pulse on exertion to the most serious circulatory disturbances consisting of general edema, and especially edema of the lungs, coughing and spitting blood, nausea and vomiting, dyspnea and palpitation. The frequency of this condition, if it corresponds to the frequency of the disease, is several times as great as that of eclampsia, being found, perhaps, in 1 per cent. of all pregnancies.

Fritsch and Loehlein have also called attention to the fact that a systolic murmur heard over the base of the heart and propagated along the vessels is found very frequently in the puerperium and occasionally during pregnancy. It resembles in some ways the murmurs of anemia and chlorosis, but its mode of production and its significance are not determined.

In this connection a word may be said concerning the much-debated question of hypertrophy and dilatation of the heart during normal pregnancy. First Larcher and some others found, in postmortem examinations of women dying in labor, that the weight of the heart is greater than in case of the non-pregnant women. These

* Read at the Fifty-fifth Annual Session of the American Medical Association, in the Section on Obstetrics and Diseases of Women, and approved for publication by the Executive Committee: Drs. J. H. Carstens, A. Palmer Dudley and L. H. Dunning.

data have been questioned, but more carefully made examinations have shown some increase in weight of the heart in pregnancy. The efforts of Ducrest and others to measure the thickness of the heart walls are less convincing in the results, because of the great differences in the amount of contraction of the heart muscles and the resulting differences in the thickness of the walls.

Duroziez demonstrated an increased area of heart dullness in the latter part of pregnancy which corresponds to the shadows shown in the Roentgen pictures recently made and published by von Rosthorn. These findings, however, do not prove an enlargement of the heart, but rather such a change in its location in reference to the anterior chest wall as to bring more of it in contact with the wall. Fritsch has held that the heart is not hypertrophied, but rather slightly dilated to accommodate a greater amount of blood.

The question is intimately related to the physiologic problem of the change in the circulation during pregnancy and labor. Has the heart more work to do during pregnancy? The amount of work to be done by the heart depends on the amount of fluid to be kept in circulation and the resistance of the tubes or blood channels. Gescheidlen found in dogs some increase in the amount of blood during pregnancy. A more important element than the quantity of blood is that of the resistance in the tubes or vessels.

Several ways in which the resistance is probably increased during pregnancy have been suggested by different writers. Spiegelberg held that the introduction of the uteroplacental circulation caused a considerable increase in the work of the heart. Lahs then showed that dividing the current, as was done by introducing new or additional channels, would rather decrease the resistance and so the work of the heart. Other ways of increasing the resistance were then considered. The pressure on the abdominal aorta by the enlarged uterus was one. The increase in abdominal pressure, due to the growing uterus, was another. The obstruction to the pulmonary circulation and disturbance of diaphragmatic respiration, was a third. That these may be elements in the problem seems to admit of no doubt. There is, however, one cause of increased resistance that has, so far as I know, been generally neglected, but one that may be at times of more importance than all others, that is, the splanchnic congestion that is characteristic of pregnancy, and probably dependent on a vasomotor agent that may be due to the toxemia of pregnancy.

An elaboration of this theory would require the entire time of a paper, and can not now be attempted. In its favor only one very suggestive fact will be recalled: an early and a constant symptom of pregnancy is congestion of the genital region with a corresponding anemia of the surface of the body. This condition is allied to that of chronic shock, where as we know the splanchnic reservoir is overfilled and other portions of the body are relatively anemic. In such a state the contracted superficial and extra splanchnic vessels furnish an enormous resistance to the blood current, and so greatly increase the heart work. This disturbance in the circulation is one of the first and most striking phenomena of pregnancy, and must be due to it. What more probable than that it, like the nausea and vomiting of pregnancy, the kidney of pregnancy, gravidal neuritis and eclampsia, is a symptom of pregnancy intoxication.

If this be a factor in the increase of vascular resistance or of the heart work, it will evidently vary much in importance, according to the degree of intoxication in individual patients. Where the elimination is poor, as in cases of renal disturbance, the intoxication will increase, and consequently the vascular resistance.

The conclusion that may be drawn from the work that has been done in the study of the effects of pregnancy on the heart is that there is generally a slight increase in the resistance due to a number of factors, and to the work to be done which leads to a slight hypertrophy of the normal heart. Occasionally the resistance is much increased, and in addition there may be a direct poisoning of the heart muscle by the toxemia of pregnancy. The myocardial degeneration thus produced is much more important than is commonly held. This pathologic change in the myocardium with the endocarditis produced by puerperal infection constitutes the pathologic changes in the heart disease, due to pregnancy and the puerperium.

A heart previously diseased is, of course, more apt to be injured by pregnancy and labor than a normal heart. Because we know so little clinically about chronic myocardial changes, we have in mind chiefly heart disease, due to valvular lesions. Whether the lesion be mitral, aortic or tricuspid, and whether it results in stenosis or regurgitation, or both, the heart is more apt to suffer from increase of work produced by any of the modes of resistance to the circulation. The degree in which it suffers varies greatly, depending, not only on the condition of the heart, but also on the importance of the disturbing factors. When there is a lack of compensation in the non-pregnant state the strain on the heart will certainly be very great, and may lead to irreparable injury; but if perfect compensation apparently existed before pregnancy, it may be broken down. The date when the disturbance begins depends on what factors are most important in increasing the heart work. If the toxic agent manifests itself early, perhaps causing a marked degree of nausea and vomiting, the cardiac weakness may be early apparent, perhaps to disappear later under appropriate management. The toxic agent may, however, show itself later in conjunction with renal insufficiency. Here the distension of the abdomen may co-operate to increase the resistance of the circulation.

Pregnancy is apt to cause several kinds of injuries to a diseased heart. It may weaken an already overstrained heart muscle or lead to its degeneration; it may also cause a renewal of an old or latent inflammation. Of course, both of these consequences may follow as an effect of pregnancy. Which is more common or more important is difficult to say.

All of the sequelæ of heart disease may be found developing rapidly during pregnancy. General and pulmonary edema, dyspnea, bronchitis, palpitation and gastric disturbance are among those most important from a prognostic standpoint. In some cases interference with general nutrition will come to be of great significance. Rarely death may occur before labor begins.

With the commencement of labor special dangers arise. If the heart has suffered much during pregnancy and the symptoms of secondary complications have already become threatening, the outlook may be serious. But even where there have been no marked signs of cardiac insufficiency, a sudden and perhaps fatal collapse is not impossible. In the first stage the contraction of the uterus in itself does not, perhaps, increase the vascular resistance, but it is not unlikely that the vasomotor mechanism is disturbed so as to create more work for the heart. Moreover, individual voluntary efforts at bearing down cause an increase in abdominal

pressure, just as in the second stage, and thus markedly increase the heart labor. It is in the second stage that the greatest danger arises. The powerful contractions of the abdominal muscles, which in a healthy person may produce a marked cyanosis of the head and chest, may overcome a diseased and weakened organ, and sudden death result.

With the completion of labor it might be thought that the dangers are past. This, however, is found not to be the case. In the casuistic we find many instances of death occurring from a few hours' to a few days' postpartum. Much discussion has taken place concerning the conditions which are responsible for these deaths. While some have thought that the sudden filling of the venous system leads to distension of the right heart, others have held the opposite view, namely, that the sudden emptying of the abdomen leads to overfilling of the abdominal vessels and a resulting deficiency of blood in the heart. It is not unlikely that there remains after the emptying of the uterus a high degree of vascular resistance, which continues to impose too much work on the weakened heart, and to which it finally succumbs in spite of the comparative relief that it must get at the completion of the second stage of labor.

Additional dangers arise later in the puerperium. The condition brought about during the latter part of pregnancy by the disturbed circulation and the respiratory and digestive complications favor local infection and its extension if there be any contamination. If infection can be avoided there are still digestive disorders and the kidney disturbance to complicate the puerperium and make it a long and tedious convalescence.

When we now turn to consider the effect of a pre-existing heart disease on pregnancy, we find the most common and chief disturbance to be an interruption of the pregnancy. This interruption may occur at any time, but most frequently in the third and fourth months. It is no doubt due generally to disturbance of the placental circulation, which may frequently be attended with hemorrhage. On account of the imperfect placental circulation and the imperfectly oxydized and purified blood, the fetus may suffer and eventually succumb inside the uterus.

As there is little or no reason why heart disease should cause sterility, it is probable that the frequency of heart disease in pregnancy corresponds to its frequency in all childbearing women. Demelin found heart disease in about 1.3 per cent. of all pregnancies. Vinay found the frequency to be 2 per cent. If 1.5 per cent. represents the number of cases of pre-existing valvular heart disease, we must remember that nearly as many cases of myocardial disease arise during pregnancy. Many of these cases cause few symptoms and may be overlooked, unless a routine examination of the heart is made in all cases.

CARE OF THE PATIENT.

In the management of this complication, if the patient be seen early in pregnancy, the first question that arises is, shall the pregnancy be allowed to continue, or should an abortion be induced? If the valvular lesion be accidentally discovered in a patient who has perfect compensation, and is perhaps ignorant of her condition, the question of inducing abortion could not be raised. She should simply be carefully watched, and if complications arise, she should be informed of her condition. But if at first the patient knows her state, and if there are signs of disturbed compensation, the question can not be ignored. If the patient should be very anxious to have a child and object to the induction of premature labor, she should be fully informed of the danger of the occurrence of a spontaneous abortion, the risk of increased injury to the heart, and the danger from secondary complications, and even death. The plan for the conduct of pregnancy should then be mapped out.

The patient should be required to give her promise to adhere to all details in this plan and co-operate with the physician in every way. When the circumstances of the patient will not admit living up to an ideal plan, such modifications must be made as are necessary, but the physician's responsibility is satisfied only when he presents to his patient a complete statement of all the facts in the case.

If the circumstances of the patient do not allow her to undertake to follow a course of treatment that promises a successful carrying of the fetus to term, or to viability, and if she wishes an abortion performed to save herself the risks of the pregnancy, then the physician has a most difficult question to decide—the necessity of an operation. He must from the histories of previous pregnancies learn the probability of a spontaneous abortion and from the anamnesis and the physical examination determine the condition of the heart and its probable resisting and latent forces. The determination of the location and kind of murmur is of minor importance. The condition of the pulse, its variation when the hand is raised above the head, the change in the heart action by change of the position of the patient, the existence of complications, such as edema and gastric and renal disease, are among the important symptoms and conditions that determine the prognosis and the decision of the physician as to operative interference.

When an operation is decided on, it should be done at once. Waiting for a spontaneous abortion is not advisable, as it promises no safer outcome than a properly performed operation and leaves the patient exposed unnecessarily to the risks of pregnancy. The mode of operation does not differ from that which is employed for other indications. If the pregnancy be not advanced beyond the sixteenth week rapid dilatation of the uterus and removal of the egg under ether is the safest method, because quickest and attended with the least danger of infection. With proper precaution, ether may be given to a patient with heart disease without fear. Between the sixteenth and twenty-fourth to twenty-eighth weeks dilatation of the cervix with a tent or bag must precede the removal of the egg.

If the attempt to carry the pregnancy to term is decided on, one of the first questions to engage the attention is the prevention of spontaneous abortion. Mueller states that abortion occurs in about one-fourth of all cases of pregnancy complicated with heart disease. In severe cases the frequency of abortion is undoubtedly much greater. Slight strains or injuries, overexertion, wearing a corset and other conditions and circumstances that would have no bearing in a case of normal pregnancy here lead to slight uterine hemorrhage on account of the venous congestion and disturbed placental circulation. Hence anything that can act as an etiologic factor should be foreseen and avoided. The slightest indication of uterine contraction should be noticed and stopped by appropriate means. The patient should be instructed in the meaning and importance of all the signs of the beginning of uterine contractions, the backache, the heavy feeling in the pelvis simulating menstrual molimina, hardening of the uterus, etc. At the first appearance of these symptoms she should lie down and send notice to her physician.

For the prevention of the uterine disturbances which precede and cause the separation of the egg, as well as for stopping the uterine contractions, the best thing to do is for the patient to keep a horizontal position, as in this position the congestion of the uterine vessels due to gravity is best avoided. In severe cases it may be necessary for the patient to keep this position most of the time of gestation. It is of use for other reasons. The work of the heart is thereby much lessened. The work of the digestive organs may be lightened, for the amount of food required by the body is very much less when the body is at rest and protected from loss of heat. Hence rest in bed in the horizontal position comes to be the most important factor in the management of heart disease in pregnancy.

It is, however, an agent that must be controlled. A woman can not lie in bed seven or eight months or even seven or eight days without suffering from lack of exercise. The blood and lymph circulation is much dependent on the muscular contractions, without which there is a stagnation, a deficiency in secretion and an auto-intoxication that leads to malaise and disturbed nutrition. To avoid these harmful effects of inactive rest, a system of bed exercises and regular daily massage should be inaugurated. The details of such a system can not be elaborated here.

When uterine contractions indicate that the danger of abortion is imminent, we must supplement rest in bed with sufficient doses of morphin or codein to stop them. Sometimes it is necessary to continue the use of morphin for a considerable period. When it is necessary to use this drug, it is well to counteract its harmful effect on the intestinal functions by giving salines or other proper correctives.

DIET.

Aside from measures to prevent abortion, the care of pregnancy includes such dietetic, hygienic and medicinal management of the circulatory, respiratory, excretory and digestive systems as is necessary to keep them in the best possible condition. The food should be easily digestible and assimilable and carefully regulated as to quantity. Too much food throws unnecessary work on the eliminating organs, and may be a source of great danger. In the latter part of pregnancy, the digestive organs may be so affected that it is difficult for the patient to take and retain sufficient food to meet the demands of the body. The caloric value of the food should be approximately determined, in order to furnish a basis for the amount given or allowed. If a patient be most of the time in bed and reasonably protected from cold, 1,000 kilo calories is sufficient to supply all demands. If she be about more or less and use up considerable energy in exercise and heat radiation she will need 1,500 to 2,000 kilo calories. Of course, I am not considering cases of slight heart involvement which do not prevent the patient from doing her ordinary work. In such cases the needs correspond to those of a healthy pregnant woman. The food should contain all the food elements, and preferably in the proportion found in milk. Milk is indeed the best food of all if it can be obtained in good condition. As the amount required is only from one and one-half to three quarts, the quantity of water which forms a part of the milk is not excessive. When it can not be used in whole or part, a menu containing toast, cereals, fresh eggs and butter, a few well-selected and carefully cooked vegetables, and if borne by the stomach, fresh fruits will answer all requirements. All must be prescribed, and nothing left to chance or to the whim of the patient or her friends and attendants. So long as the digestive apparatus is in order, the dangers from an improper diet are not recognized. A mistake in diet may, however, upset the liver or kidneys and lead to a circulatory disturbance that reacts on the digestive apparatus, and establishes a vicious circle hard to be broken.

HYGIENE.

The hygienic management embracing regulation of exercise, sleep and rest, dress, bathing, avoidance of infection, etc., should be equally prescribed and controlled by the physician. The question of bed exercise in serious cases has been considered already. From the principles laid down in the discussion of the prevention of abortion, it is evident that physical exercise must be taken with care. Nothing that involves risk of accident should be allowed. Exercise should not be too long continued, and under no circumstances should the patient become tired. This restricts exercise in most cases to moderate walking and to riding over good roads, and proscribes tiring housework, as well as indulgence in active amusements.

If the patient is not obliged to remain in bed all the time, she should lie down at least once a day for a half hour or more. If the complications are not too disturbing, there is generally no difficulty in procuring a reasonable amount of sleep. With the appearance of dyspnea, coughing, etc., want of sleep may become serious and furnish an indication to interrupt pregnancy.

Two points should always be made in regard to the dress or clothing of the patient: First, there should be no constriction of the body of the patient with corsets or skirtbands. The skirts must be light and suspended from the shoulders. Second, the underclothing must be warm enough to protect well the skin. Skin elimination is not unimportant, and must not be checked.

The frequency, kind, temperature and duration of the baths are somewhat important matters, and must be decided on after studying the case. Sometimes a cold bath can be borne by one accustomed to it. A long hot bath is generally enervating and harmful. In the latter part of pregnancy the patient must usually be content with a sponge bath.

Of very great importance is the avoidance of infection, and especially infection of the nose, throat and lower air passages. The condition of the patient is one of lowered resistance which makes an infection easy. A tonsillitis or bronchitis will very quickly change the picture of a smoothly progressing pregnancy to one greatly disturbed, hence all exposure to infection from friends or relatives must be strictly forbidden. Pure fresh air is invaluable, but dust from any source—the house or street—should be regarded as poison.

The medicines most needed are digitalis and strychnin for the heart, morphin or codein to quiet uterine contractions, and calomel, cascara, salines or other laxatives for the bowels. Chloral may occasionally be needed as a hypnotic. Oxygen should always be provided in case of dyspnea.

INDUCTION OF PREMATURE LABOR.

In spite of the best management of pregnancy, the time may arrive when, long before the end of gestation, the condition of the patient is such as to cause grave anxiety and compel a consideration of the advisability of inducing premature labor. The indications for the operation are increased frequency of cardiac upsets, pal-

pitation, growing weakness of the heart, as shown by a weakened and more rapid pulse, and increase in edema with disturbed respiration, and a serious impairment of nutrition. The operation will be postponed if possible till the thirty-sixth week on account of the child. Of course, it may be required earlier, as in all cases of induction of labor the utmost accuracy in determining the length of gestation should be secured. All preparations for the care of the infant have been made; the incubator is at hand and the nurse instructed in managing it; oxygen is ready, both for the mother and baby.

That method of inducing labor for heart disease should be chosen that is reasonably prompt and certain, and at the same time disturbs the mother the least. When there is hydramnion or twins the membranes should be ruptured to furnish at once some relief from the abdominal distension. In other cases we would probably choose between the use of the metreurynter and the bougie. If the cervix is soft and dilatable and the woman not very sensitive to manipulation, so that one may introduce a small Voorhees bag without an anesthetic, the metreurynter method is to be preferred. When the woman is sensitive so that the introduction of the bag would be impossible without an anesthetic or when the cervix is long and hard and not easily dilatable, the bougie method is better. As is well known, the chief objection to the use of the bougie is its uncertainty, the duration of labor frequently being thirty-six hours or more. In cases of heart disease, however, the uterus is more sensitive, spontaneous abortion and labor being common. Hence the bougie generally acts more promptly than in other cases. For this reason this method may be employed here with a good deal of confidence. The details of both these methods are assumed to be familiar to all, and will not be discussed.

The essential points in the management of labor complicated with heart disease are careful watching, prompt interference when indicated, the use of ether when necessary, and the free employment of oxygen. From the beginning of labor till the completion of the third stage, and in bad cases for hours longer, the physician must be in constant attendance and watch closely the effect of labor on the heart. Every preparation for all possible operations must be made. Heart tonics and stimulants are administered as needed. One of the most important helps is oxygen. To one who has never used it in such cases its effects are magical. It not only helps the respiration, enabling a patient to lie down who has been obliged to keep the sitting position to breathe, but it also has a soothing effect almost equalling an anesthetic. It will, in fact, largely replace ether, which will rarely be needed except in cases of operation.

Operative interference may be required in any stage of labor. As a rule, there is less danger in the first stage than in the second, and so less indications for interference. If the cervix opens slowly and the heart begins to tire, it may be necessary to assist Nature. Ether is, of course, the anesthetic chosen. It is safer to give ether than not to give it, for the pain and shock are more injurious than the anesthetic. Yet the operation should be as short as possible; hence if it is necessary to dilate the cervix it is better to do so by incision than by manual or bag dilatation, unless the cervix is soft and easily dilatable. Dilatation will be followed by rapid delivery of the child, either by forceps or by turning and extraction.

There is no special rule for managing the third stage. Generally the placenta comes away promptly. If an operation has been done it may be desirable to remove the placenta at once to avoid further disturbance to the patient. Otherwise the cord may be cut short, dry dressing applied, and the patient allowed to remain quiet until the placenta comes away of itself.

In accordance with the theories of the causes of the disturbance following the emptying of the uterus, it has been advised to apply sand bags or other weights to the abdomen after the birth of the child to increase the abdominal pressure. A good bandage is probably quite as efficient. The chief thing to remember is that the danger is not passed with the expulsion of the child, and that then heart stimulants and oxygen are especially needed.

The puerperium requires as careful management of the diet, exercise, massage, etc., as did the pregnancy. During this period, which should include the full puerperal period of three months, the patient may be restored to a fair state of health. As a general rule, the mother should not try to nurse the child. The outcome depends chiefly on the thoroughness with which the patient follows the plan laid down, even to minute details. Here, as in hardly any other field of medicine, is made apparent the importance of the qualities of patient persistence in the physician and conscientious obedience in the patient.

DISCUSSION.

DR. RUDOLPH W. HOLMES, Chicago—It is very desirable to have our attention called to heart disease in its obstetric relation, for there is a very popular misconception prevalent as to its frequency and mortality. The study of heart disease in pregnancy and labor is based too largely on old statistics, compiled at a time when normal and abnormal obstetric cases were inadequately studied. The most popularly quoted paper is that of MacDonald, published in 1878, but he based his conclusions on only a few severely ill patients, where necessarily the mortality was high, from 50 to 60 per cent., according to the lesion, mitral stenosis being the most serious. Recently Fellner made a study of the heart cases occurring in the Klinik Schauta in the past ten years. He found, first, that 2.4 per cent. of pregnant women have heart affections, few only offering symptoms; second, that the mortality was 6.3 per cent., in sharp contrast to older figures—the deaths being largely limited to cases of mitral stenosis. A word might well be said regarding morphia in pregnancy. It is a moot question if morphia, exhibited in reasonable doses during pregnancy, affects the baby, but there can be no doubt that it may be disastrous to the child if administered within an hour or two before delivery, for then the center of respiration may be paralyzed and the child be unable to breathe at birth. The babies of women subjects of heart disease are weaklings and often prematurely born, making the hazard from the morphia all the greater. If morphin is to be given it should be a cardinal principle that it may be given in pregnancy to allay uterine irritability. The moment labor begins morphia should be given sparingly, and in the second stage should be contraindicated, for it offers great danger to the child. I have seen babies severely poisoned by the administration of morphia to the mother, necessitating protracted artificial respiration. The use of heroic doses of morphin in eclampsia, I believe, is responsible for many fetal deaths in that condition. In inducing labor I think that there can be no discussion but that the catheter is the most logical instrument for the purpose in this condition. If labor is to be accelerated, and the os permits it, a small flat-topped Voorhees bag may be used. A large bag ought not to be employed, because there is danger of raising the intrauterine pressure, and thereby compromising the heart action. If cervical effacement be present, I believe the cervical incisions offer a useful means of securing full dilatation, and further, bleeding is produced which has a beneficial effect on the heart. Version or forceps will be employed, depending

on the conditions. I do not believe, with Fritsch, that the disturbance in the third stage of labor is due to anemia but rather to an overloading of the right heart. Therefore, in the management of the third stage of those heart cases with impaired compensation the indication should be to bleed the woman, if possible. The moment the baby is born and the cord severed, the placenta should be manually removed slowly, so that the cotyledons are torn away gradually, thus enabling one to regulate the amount of blood that is to be lost. It is a distinct advantage to have the woman bleed in order that this congestion of the right heart may be obviated. In conclusion, my remarks apply alone to those grave heart cases with a lack of compensation. The labors of women with compensated heart lesions should be conducted practically on the lines approved in normal cases.

DR. N. R. HOTCHKISS, New Haven, Conn.—It has been my misfortune in several cases of mitral disease to have the woman die from cyanosis in spite of all the precautions that were taken. I have the feeling that in mitral disease, where the patient exhibits shortness of breath during pregnancy, we should not permit the case to go on to a natural termination. The earlier labor is induced, the better for the patient. In regard to what Dr. Holmes said of the necessity of blood loss in these cases that go to termination, that is one of the most important things necessary. I have noticed a number of times that the loss of blood relieves these patients very much, and several times I have performed venesection to relieve the cardiac and respiratory dyspnea.

DR. FRANK CAREY, Chicago—While one may agree with Dr. Holmes as to the necessity of loss of blood in a given case, I can not agree with him in the general advocation of going after the placenta at once, and letting that go out as general practice for physicians. There is the possibility of infection, and one can not control the amount of blood to be lost by slowly picking off the placenta. To bleed a patient open a vessel and have no difficulty stopping the bleeding. If the placenta can be delivered within a reasonable time, say twenty or thirty minutes, I certainly should not advocate its manual removal, by the general practitioner at least.

DR. HERMAN GRAD, New York—This is an important subject. I know of nothing more formidable to cope with at the time of labor than a bad heart and damaged valves. These cases are exceedingly difficult to manage, especially if they do not present themselves until the ninth month of pregnancy. A case came under my observation recently, in which I found a mitral stenosis. While sitting quietly in a chair the patient was comfortable, but the slightest muscular exertion would send up her pulse and produce cyanosis. When labor began she was cyanosed and unable to lie down. She had to be delivered in the standing posture, with two or three persons holding her erect, and myself kneeling on the floor. It convinced me that if these cases come early in pregnancy, labor should be induced, because the woman is in too great a danger of losing her life. With regard to bleeding, I have observed that the loss of blood relieves these women, and it is astonishing to see how soon afterward they can recline in bed. The patient I mentioned passed through the puerperium in comfort. Six weeks after her confinement she went out walking. On returning home she dropped dead while going up the stairs to her apartment. No autopsy was permitted. She had murmurs all over her chest. Her mother told me that although they knew of her heart trouble, they nevertheless permitted her to marry, not knowing that pregnancy would be such a serious matter.

DR. CHARLES J. HASTINGS, Toronto, Canada—Some one has suggested the slow peeling off of the placenta to encourage hemorrhage in some cases in order to relieve the engorged right side of the heart. This strikes me as being rather unscientific. While I appreciate the value and importance, in extreme cases, of relieving the engorgement of the right side of the heart, yet I think this should be done by venesection, in the usual way. I look on the introduction of the hand into the uterus and the peeling off of the placenta as one of the most formidable and most dangerous operations of labor and should only be resorted to in extreme cases, and always with a gloved hand. In my opinion we have no more valuable drug than morphin at our command; in fact, I think there is no other to compare with it in the relief of cardiac dyspnea and shock. I have never seen any ill results to the child *in utero* follow its use, and I have had occasion to give it in many cases before the birth of the child. I do not question the possibility of its giving trouble, but my experience has not been in that direction. I think we ought to consider well before the induction of premature labor, both for the mother and child. The mental effect on the mother might be more disastrous than the continuance of pregnancy, as we often see more disastrous symptoms in the earlier months of pregnancy than later on, providing the patient is carefully watched and treated. Systematic rest, cardiac tonics, careful dieting and proper elimination usually result in satisfactory compensation. We should, therefore, be slow to sacrifice the life of the child. I have had, however, one very grave case where the patient had had two severe attacks of hematemesis as a result of engorgement of the right side of the heart. In this case, in consultation with two of my confrères, we decided to empty the uterus at once.

DR. C. S. BACON—The principal point taken up in the discussion seems to be the management of the third stage of labor, the question of removing the placenta and increasing the hemorrhage. There have been two views held as to the cause of the disturbance after the birth of the child. One, that there is an anemia of the heart, and the other, that there is an engorgement of the heart; two opposite views. It is not necessary to regard either of these conditions as the essential etiologic factor. It is certain that the embarrassment of the circulation continues after the child is expelled. The vascular resistance continues for hours; in fact, for some days. Sometimes death occurs immediately after the birth of the child, but more frequently not until some hours afterward. We may assume that the heart is called on to do an increased amount of work, and that this condition is the cause of the fatal termination. These theoretical conditions as to the relative anemia or congestion of the heart need not influence us too much. I doubt very much whether it is necessary to increase the hemorrhage by venesection or by manual removal of the placenta, as mentioned by Dr. Holmes. Remember that the patient is weak; she has been nourished improperly for months, and she has a weak, poorly nourished heart. Why make her condition worse by withdrawing blood? What the patient needs is stimulation before, during and after labor. I wish again to emphasize that the use of oxygen during labor and continued for some hours afterward, is preferable to producing hemorrhage, either by venesection or manual removal of the placenta. The danger of infection referred to by Dr. Carey must be considered, because the patient, on account of her weakened condition and diminished resistance, is more liable to infection at this time than at any other. As to the use of morphin: These children are in a weak condition, and it is probable that this weakness is the result of a disturbed placental circulation and not because of the use of morphin. I have given morphin for weeks and months, in carefully regulated doses, to prevent uterine contractions, and I am convinced that I would have had a spontaneous labor without it. The child was born and, so far as I could see, was not injured in any way. In regard to the nature of the heart lesion: The common belief is that an aortic disturbance is more dangerous than a mitral lesion, but this is not in accordance with Fellner's operations. I do not believe that this is of so much importance as is the condition of the patient. As to the interruption of the pregnancy early: Even though the woman may be in great danger, we have no right to induce labor unless she will consent to it, and I doubt very much whether we have any right to urge the patient to consent. All we can do is to make clear to her the dangers of her condition, and insist that if she wants to go to term, in spite of our judgment, that it is dangerous, then she will know exactly where she stands and will assume the responsibility herself. It is wrong to let her go in ignorance of her exact condition.

ORAL INFECTION AND STERILIZATION.*

M. L. RHEIN, M.D., D.D.S.
Lecturer on Dental Pathology, University of Pennsylvania.
NEW YORK CITY.

The lack of requisite training of medical undergraduates in dental principles is well understood by our Section. Appreciating as we do the bar to general efficiency which this defect in primary education causes, it has been for many years one of the important aims of the Section on Stomatology to endeavor to have proper instruction in dental principles made a part of the medical curriculum. To all practitioners laboring under this disqualification, oral infection will always be more or less of a bugaboo. This is due to the fact that in order to be able to comprehend any departure from a normal condition of the tissues in the dental region, it is necessary to be thoroughly familiar with the physiologic appearance of these parts.

The most important thing in oral infection is, naturally, a proper diagnosis. For this purpose it may be best to separate the subject into two subdivisions; first considering it from a standpoint of semeiology, where the local pathogenic condition is merely a symptom of some constitutional disease; and, secondly, from an etiologic standpoint, where the mouth infection may truly be said to be the exciting cause of other functional disturbances.

When we consider the vast network of fine capillaries that freely anastomose through the gum tissue, and the fact that they are the arterial terminations of one of the longest of blood courses, it is not unreasonable to suppose that in all forms of malnutrition the tissues nourished by this ultimate capillary network should be the first to exhibit symptoms due to a lack of normal nourishment. The gums, the pulps of the teeth and the lining membrane of the roots, by means of which they are properly articulated in the alveolar sockets, are the parts nourished by these capillaries.

In all diseases of the vital organs, before any other clinical symptoms are made manifest, these tissues assume a pathologic appearance, varying in character and degree according to the nature and severity of the disease. Atrophic changes are liable to be produced by numerous local causes, and thus easily mislead the student. When, however, the changes in the local appearance of the gums are merely symptomatic of some constitutional disease, the acute local symptoms continue to increase in severity with the progress of the disease, and in consequence, the clinical aspects of the gums in these vital diseases become great aids in prognosis. When the vitality of the local parts is depreciated to a sufficient degree, they become a prey to infection, and the result is seen in the condition commonly known as pyorrhea alveolaris. When the stage has been reached where the discharges emanating from the alveolar sockets cause irritation of the surface of the digestive tract, due to the absorption of the toxins by the swallowing of the same, it becomes an additional menace to the welfare of the patient.

The nature of this discharge varies considerably, due not only to the stage of the disease, but influenced materially by the character of the functional disorder. A common error of dentists in speaking of these discharges is to fail to differentiate between those of a mild, almost bland character, and those of a more irritating form of sapremia, and from this to a virulent form of purulent effusion.

If we are to consider this matter from a scientific standpoint, it is time to cry a halt on speaking of all discharges of this nature as pus, without any bacteriologic evidences of its existence. In saying this I do not wish in any manner to belittle the baneful results that frequently ensue from the absorption of toxins where the discharge is nothing more than a simple sapremia. Since pyorrhea alveolaris has become a prominent factor, not only in dental but in medical literature, it is not an unusual thing to see erroneous diagnoses of this disease made. Dental practitioners frequently confound it with simple alveolar abscesses. If this happens it is not unnatural that the medical practitioner should often make serious errors of diagnosis in purulent effusions in the oral cavity.

An interesting clinical experience in this respect will better illustrate the point in question:

Miss L., aged about 50, fell down a flight of stairs. She was bruised considerably about the face, but paid very little attention to the matter for twenty-four hours, when, on account of her suffering, she sent for her family physician, who had been attending her for some time for diabetes.

He found the patient showing some temperature, and when, after forty-eight hours, this continued to increase so that it ran up to 102.5, and her mouth filled with purulent matter, he sent for a prominent surgeon.

After a careful examination the surgeon made a diagnosis of pyorrhea alveolaris, and prescribed a camphor mouth wash. The attending physician, accepting the diagnosis made, felt that the patient would receive better attention at the hands of a stomatologist, and I was called in.

Instead of finding the patient suffering from pyorrhea alveolaris, there was a comminuted fracture of the alveolar process, extending from the first upper right molar to the left canine, and between forty and fifty pieces of fractured fragments were removed. This resulted in the loss of all the teeth in this region. On account of the diabetic condition, the delay in proper operative interference left the patient in a very precarious condition. Infiltrative absorption had already produced a condition of osteomyelitis, and only the most strenuous efforts of aseptic surgery sufficed to save the life of the patient.

In reply to the query of a prominent surgeon as to our methods of diagnosis in oral infections, I said that the same rule applied here that would apply to any other part of the body. If there were any possibility of a reasonable doubt, a diagnosis could only be made by exclusion. One of the common errors that is made in reference to this pathogenic condition, is the idea that it is confined to middle aged and elderly people. There is no age in which a patient can be said to be immune from this disease.

TREATMENT OF PYORRHEA ALVEOLARIS.

Before proceeding to consider the other types of oral infection, a few words as to the treatment of pyorrhea alveolaris may be of value. The original cause of the disorder must be properly diagnosed and brought under proper subjection. Where this is possible the prognosis is always more or less favorable if capable local treatment is enforced. It is, perhaps, unnecessary for me to state that this means the careful removal of every form of concretion and foreign substance from the teeth and roots and careful polishing of every portion of the teeth and exposed portions of the roots. This must be followed up and persisted in at very frequent intervals. The important treatment of this condition, however, is preventive treatment. It has been demonstrated by

* Read at the Fifty-fifth Annual Session of the American Medical Association, in the Section on Stomatology, and approved for publication by the Executive Committee: Drs. E. A. Bogue, Alice M. Steeves and M. L. Rhein.

clinical observation that the frequent cleansing and polishing of the teeth surfaces (done in the proper manner) will so enhance the vitality of the dental region that functional disorders fail to produce the serious pathogenic conditions which result in mouths where this prophylactic treatment has not been used.

ETIOLOGY OF ORAL INFECTIONS.

We now come to the consideration of oral infections from an etiologic standpoint; that is to say, those cases that primarily arise in the oral cavity and are the original causes of other troubles.

First of all, in this respect it may be wise to say that there are forms of pyorrhea alveolaris due entirely to local causes. These are most commonly caused by neglect in the care of the teeth and the irritation caused by more or less extensive accretions of the calculi. It is also caused by the irritation produced from badly fitted crowns, wedges, injudicious separating of teeth and other causes which too often can be laid directly at the door of the dental attendant. Local treatment is a ready cure for all of these cases.

Perhaps the most common type of oral infection that is found is the simple alveolar abscess. This is caused by the death of the pulp of the tooth which becomes an easy prey to the first migratory bacteria.

TREATMENT OF ALVEOLAR ABSCESS.

The cure of these cases in the acute stage is a simple matter, and consists in the aseptic removal of every portion of the contents of the root canals, their thorough sterilization and subsequent hermetical sealing.

Where the disease has run a chronic course, the alveolar process in the neighborhood of the apex of the root and the outer periphery of the end of the root itself becomes necrosed. In such cases it is necessary, in conjunction with the treatment of the root canals, to surgically remove every portion of the necrosed bone and root if a cure is to be effected. Extraction of the tooth in itself will effect a cure, and of course is frequently the most efficacious remedy in infirmary practice.

At a recent meeting of the First District Dental Society in New York City, a prominent surgeon, reading a paper on this subject, made the remarkable statement that in cases of acute alveolar abscess the tooth should never be extracted until all the acute symptoms had subsided, claiming that it was dangerous to extract in this acute condition. He advised the simple lancing of the abscess, allowing the patient to suffer all the effects of purulent absorption, until, as he said, the leucocytes had overcome and defeated the bacteria.

It is unnecessary for me to place the ban of condemnation on any such practice before this Section. I merely cite it as an illustration of the fact that prominent medical men hold such peculiar views.

The main cause for opinions of this kind is due to the fact that physicians are frequently called in to see patients suffering from a more or less severe pyemia, subsequent to the extraction of some tooth. They fail to recognize the fact that the pyemic condition has been caused by lack of proper aseptic care of the wound after extraction of the tooth. In this way improper dental service is the cause of illogical medical inference. Oral infections involving the antrum should receive the same thorough treatment of removal of the focus if a cure is to be effected. When infections are absorbed through some of the many channels in the jaws, as per the inferior dental canal, speedy and radical surgical work is required to effect a cure.

Whatever the condition may be, a careful differential diagnosis must make clear the nature of the malady.

The effect on patients of any of these forms of oral infection is two-fold. In the first place, they suffer from the direct absorption of the toxins from the constant swallowing of the contaminated secretions, which tend not only to irritate the digestive tract, but in turn are absorbed into some particular portion of the tract, and frequently serve to increase or start up a chronic autointoxication of the system. This, in turn, results in the impairment of some of the functional parts of the body, and it is not an uncommon thing to see an etiologic oral infection causing constitutional derangements which are again manifested most markedly in the mouth by producing the well-known symptoms of pyorrhea alveolaris.

NEGLECT OF MOUTH INFECTION.

In closing, I wish to call attention to the serious neglect by the general surgeon of the evil effects of mouth infection. As stomatologists we realize how small a percentage of people keep their mouths in an aseptic condition. The modern operating room is replete with every aid and contrivance that can assist in aseptic surgery. Clean aseptic garments are a necessity to every attendant, the mouths of the operator and attendants are covered with sterilized materials; the hands of the operator and assistants are covered with sterilized gloves; the patient is carefully prepared for the operation in every respect, except that of his mouth, which frequently is filled with sapremic, if not with purulent effluvia. I leave it to the logical imagination to picture the result of such conditions, especially in intestinal surgery.

DISCUSSION.

DR. E. C. BRIGGS, Boston—I think autointoxication in the alimentary canal plays an important part in the infection of the mouth. It has seemed to me, in my examinations of the saliva and of urine in cases of interstitial gingivitis, that I have found the most important indication for treatment to be the thorough cleansing of the alimentary canal. One patient may show uric acid diathesis and another only poor nutrition, but in most cases there is a failure on the part of the patient in his daily life to have the alimentary canal thoroughly clean, and as a result he becomes autointoxicated. I want to speak of an operation for the correction of prominent sockets of teeth, which I am not aware has been done before. It is for the treatment of cases in which the teeth, if left to themselves, erupt and, extending until they have cleared themselves of the gum, project down very far, overlapping the lower incisors and give the "gummy" smile so disfiguring to the patient. Sometimes the lower lip almost covers the upper teeth and the smile discloses only the gum. Some years ago such a case was brought to me which was very marked. This led me to do a thing which I have done in several cases since, that is, the cutting away of the gum and the alveolar process, when it was necessary, to uncover the crown of the teeth in the position I wished them to stand, that is, before they had come down and projected themselves beyond the normal line of the gum. After the cutting operation I put in a plate, but later on I found that merely enucleating the tooth seemed sufficient to avert a tendency to project downward. I have treated a score of cases in the last six or seven years. It seems to me rather a satisfactory operation and I should like to have someone else try it.

DR. STEWART L. MCCURDY, Pittsburg—Dr. Rhein's important paper is of special value to the oral surgeon whose work is confined to major operative work. Extensive wounds and absorbing surfaces are always present, and one of the most serious complications in operations about the mouth is infection. By observing Dr. Rhein's points, I think we can secure a more

aseptic field and thus guarantee a more prompt repair after operations.

DR. A. W. HARLAN, New York—Dr. Rhein's paper further emphasizes the remarks made by Dr. Latham on the incorrect use of terms. We have had a paper on pathologic irregularities, dealing with suppurations and displacements of the teeth in their sockets. We have had another paper on oral infection which practically deals with the same subject. One gentleman uses the term pyorrhea in one portion of his subject and in another says interstitial gingivitis. To an outsider, knowing nothing about the subject, this would be confusing. Interstitial gingivitis is the term that has been coined by Dr. Talbot to describe the pathologic changes that take place around the roots of teeth. It is an absolutely incorrect term for the reason that many of the lesions of the gums commence, not between the teeth, but on the labial and lingual surfaces of the teeth. It is, therefore, improper to use the term interstitial gingivitis to cover the whole field. The term which is most used describes the effects rather than the cause, and I must protest against the misuse of terms by men like Dr. Talbot, Dr. Rhein and others, because none of the terms convey the intended meaning to a non-professional person.

DR. EUGENE TALBOT, Chicago—I am surprised that such an omniscient man as Dr. Harlan should be ignorant of anything. I never thought of designating inflammation between the roots of teeth as "interstitial gingivitis," nor does the majority of the dental profession understand it so. It shows the greatest ignorance to speak of interstitial gingivitis as an inflammation between the roots of the teeth. Every physician and trained dentist knows that interstitial inflammation means sclerotic inflammation of deep-seated structures such as is found in the kidney, liver and such organs. It never occurred to me when I coined the term that it was absolutely exact; no term can be. It means a deep-seated inflammation in the alveolar process and not between the teeth any more than any other part of the alveolar process. The term is properly understood in this sense by the majority of pathologists. If there is one thing on which physician and dentist alike should be better educated, it is infection from the mouth. It will not be long before more is definitely settled about diseases of the alimentary canal, especially about autointoxication, intestinal fermentation and appendicitis. In some cases I could approximately diagnose appendicitis due to infection from the alveolar process. It is a subject which requires the attention of the medical profession and especially of the dental profession.

DR. ALICE M. STEEVES, Boston—In regard to Dr. Harlan's remarks, diphtheria conveys a definite idea to the laity. There are many infectious acute diseases of the throat that are named diphtheria by professional people, and while it does convey a definite idea to the laity, always conveys a serious idea and is not always justifiable. There are many conditions of the throat, such as follicular tonsillitis, etc., not diphtheria. Also in typhoid fever there are many conditions of the intestinal inflammations that have in the past been covered up for various reasons, perhaps imperfect diagnosis, under the term typhoid fever. As time goes on and these cases are looked into more carefully we know these cases have not all been typhoid fever. I think, therefore, that typhoid fever, diphtheria and various other affections are very likely to be used for a number of conditions without conveying any definite idea to the laity.

DR. GEORGE F. EAMES, Boston—The term interstitial gingivitis has been accepted by many for the want of a better one, but as Dr. Talbot has defined it as a deep-seated inflammation in the alveolar process, it seems to me that neither the term interstitial nor gingivitis applies to the diseases commonly included in the term pyorrhea alveolaris. Undoubtedly numerous diseases of the throat in the past have been classed as diphtheria; at the present time, however, no conscientious physician could make that mistake. The microscope settles it beyond a doubt.

DR. VIDA A. LATHAM, Rogers Park, Chicago—There are no text-books that cover properly the field of oral asepsis. Dr. Hunter's and Dr. Marshall's works are the best. The dentist who meets with all classes of infection of the periodontal tissue—call it pyorrhea alveolaris, if you wish—is at times appalled at the rapid onset and far-reaching results. We see cellulitis with edema of the cheek so severe that we are alarmed. Some people put on cold compresses and advise antisepsis of the mouth, with calomel internally, which is in some cases, perhaps, contraindicated. It seems to me that this is a subject which the profession might take up with a great deal of profit, and also make a better study of the growth bacteriologically, following the lines of Miller, Vincentini and Goadby, who have tried to find some culture media on which they can grow the mouth germs. This Vincent's angina is sometimes confounded with diphtheritic infections and is a source of danger in a dental office. I believe strongly in the fact of autointoxication; also that these cases of pyorrhea alveolaris or interstitial gingivitis may be caused in many cases by profound anemia, which we know is often due to autointoxication, and these are the cases where we get a neurasthenic type from some maldevelopment through faulty metabolism.

DR. RHEIN—I had trusted that the purport of this paper would not be misconstrued. It was not my intention to make this a subject practically of dental discussion nor to bring in the mooted subject of nomenclature on this point. It is well understood by all of us how difficult it is to settle that question, so I referred to the condition as pyorrhea alveolaris, because it is the name by which it is most generally known among the medical men, and this paper is intended for the general medical practitioner. Personally, I am ready to adopt the name of interstitial gingivitis instead of pyorrhea alveolaris, if it could be generally adopted. I was much interested in Dr. Briggs' remarks regarding reimplantation, and I believe that in some cases we may get the results he speaks of. I do not believe, however, that we can get better results by reimplantation than with the same amount of surgical efficiency. The objection to implantation remains until it becomes disproved that it is only a temporary operation, unless ankylosis should set in, which is present in only a very few cases. I will take great pleasure in giving Dr. Briggs' method further attention. In regard to sterilization, there is not a general medical practitioner, unless he has been especially trained, who would understand what we mean by "placing the mouth in an aseptic condition." That is one of the things that Dr. Latham brought out. Absolute sterilization of the mouth will always remain an impossibility just as absolute perfection of occlusion will remain an impossibility to the human race. What is construed by the medical profession to be placing the mouth in as sterile condition as possible means, as a rule, to brush the patient's teeth and give him a mouth wash. A patient who is to be placed on the operating table ought to have every particle of foreign matter removed from the teeth. The teeth should be cleansed and polished by a special dental nurse and then the mouth wash properly used will place that mouth in a comparatively sterile condition so far as the mouth bacteria are concerned.

Occupations for Lepers.—A Russian physician, H. Koppel of Dorpat, of large experience with lepers, attributes their dread of entering an asylum to the lack of remunerative employment in them. He comments on the rapid course of the disease at home in comparison with the long survival in asylums, and ascribes it to the lack of medical care of the slight injuries to which their anesthetic condition renders them especially liable. At home no attention is paid to these abrasions and they entail long suppuration which undermines the general health. He advocates the introduction of various handicrafts for the lepers, making articles that can be adequately sterilized by boiling before distribution outside or any articles for consumption in the asylums, farming, casting, etc., but all with the proviso that the workers are to be paid for what they accomplish. He has found it advisable sometimes to hire out the men to neighboring farmers. They go directly to the fields and return to the asylum to sleep and eat, and the money they earn is their own. They will not work when there is no money incentive; inaction is depressing and the fear of it keeps them away from the asylums where they belong.

THE SURGERY OF THE BILIARY TRACT.

ESPECIALLY THE INDICATIONS FOR OPERATION AND THE IMPORTANCE OF DRAINAGE.*

MAURICE H. RICHARDSON, M.D.
BOSTON.

The present communication seems to me justified only in the light of experiences which I have had during the past winter. We are still far from a satisfactory solution of many questions concerning the surgery of the biliary tract. The following are some of these questions:

(*a*) Should gallstones be removed even if they cause no symptoms?

(*b*) What is the importance of biliary drainage after opening the gall bladder or gall ducts?

(*c*) What is the best way of preventing hernia after operations on the biliary passages?

(*d*) What is the significance of the biliary fistula?

From the beginning, hernia in the scar and biliary fistula have been enough to dampen the surgeon's enthusiasm for a procedure which, in many other respects, is one of the most brilliant and effective in modern surgery.

The cause of hernia after operations on the biliary tract is the long incision and the destruction of the motor terminals of the intercostal nerves, and especially the use of drainage, which prevents immediate closure of the wound. The cause of biliary fistula is an obstruction of some kind, usually an overlooked stone, in the course of the common duct. The obstruction may be complete or it may be slight. To some degree, however, it must be present in every case of biliary fistula. Not infrequently the obstruction is the result of chronic inflammatory processes in the immediate vicinity of the common or hepatic ducts.

What more easy and effective way of preventing both hernia and fistula could there be than immediate closure of the gall bladder after the removal of gallstones, or ligation of the cystic duct after cholecystectomy, followed by secure suture of the abdominal wound?

No course of procedure can be more effective than this in preventing these two evils. Instead of hernia and biliary fistula, however, still greater evils may follow.

My own experience has shown that in all lesions of the biliary passages the most important thing to be accomplished is persistent and prolonged drainage of the gall ducts and the gall bladder. Furthermore, immediate closure of the gall bladder, cystic and common ducts, after extensive manipulations and perhaps bloody dissections, may be attended by dangers to life of no light weight, and by disasters of the first magnitude during convalescence. Post-operative complications have arisen for which there have been no precedents, and to remedy which secondary operations of the utmost difficulty and danger seem to be the last and only resource.

The occasional occurrence of a biliary fistula, for which at the operation no adequate cause could be found, presents a complication not only distressing to the patient, but mortifying to the surgeon. Furthermore, it requires an operation sometimes of much greater danger and suffering than the original one.

Three years ago the question of indications for operation in gallstone disease was discussed here before this body. The prevalence of opinion was strongly in favor of the proposition that gallstones should be removed as soon as they begin to offend. Subsequent experience among medical, as well as among surgical men, has, I believe, shown the truth of the proposition. The early removal of gallstones by mechanical art has proved brilliantly successful. This operation would have proved more brilliantly successful, however, had it been possible to make an earlier diagnosis. The weak point of to-day in the treatment of gallstone disease is our failure to recognize it early enough for a simple and uncomplicated operation.

It is not the discussion of diagnosis in these diseases, however, to which I would invite attention in connection with the question of indications for operation. It is rather the discussion of a more radical proposition: "Gallstones should be removed whenever they are known to be present, whether they offend or not, unless the patient's condition forbids operation."

In previous papers I have considered substantially the above proposition, and have advocated exploration of the gall bladder whenever there was a strong suspicion of gallstone disease. The present question differs from the other only in the fact that gallstones are known to be present; it is a question, therefore, which can arise only during the progress of an abdominal operation. It may, of course, be considered, and generally is best considered, after convalescence from the original operation, if that operation is itself a severe one.

Many interesting observations are possible on patients who are known to have gallstones, and especially when the size, shape, number and situation of the stones are known. Without going into details of this sort, however, as beyond the scope of this paper, I would say that many obscure and trivial symptoms may be explained by the known presence of gallstones. Gastric and hepatic symptoms of slight importance, and usually regarded as of no consequence, acquire a significance which is at times remarkable.

Occasionally the gallstones observed at, say, a hysterectomy or some other procedure so formidable as to forbid immediate removal, begin immediately to cause serious trouble. The onset, course and conclusion of the case is watched with extreme interest and, in the beginning, at least, with absolute knowledge of the pathologic condition. At times, I regret to say, the course is observed with keen regret that the stones were not removed at the original operation.

A woman of about 50 submitted in March to an operation for the removal of double ovarian cysts. These cysts were malignant and infiltrating. The incision was a long one, which permitted easy inspection of the gall bladder. The attachments of the gall bladder were long; the fundus was easily delivered; the contents were numerous gallstones, apparently faceted, of similar size and shape, situated in the gall bladder itself; none were impacted and none showed any tendency toward impaction. This was one of a considerable number of similar ones in which I had discovered gallstones in the course of some serious abdominal operation. In some I had removed the stones, and in some I had not. It was obviously absurd to remove gallstones from a patient hopelessly infiltrated with cancer. I therefore let the gall bladder alone. It was palpated, however, by myself and by my assistants.

During convalescence the patient became suddenly jaundiced, but without any very severe pain. The closure of the common duct was immediate and com-

* Read at the Fifty-fifth Annual Session of the American Medical Association, in the Section on Surgery and Anatomy, and approved for publication by the Executive Committee: Drs. DeForest Willard, Charles A. Powers and J. B. Moore.

plete. The patient, already afflicted by the discomforts of jaundice, soon showed signs of recurring cancer. The abdomen became filled with fluid. Itching of the skin was intolerable. When I saw her last she was in extreme discomfort in every way, and was soon after reported as dying.

In another case, at a hysterectomy, I discovered a single large gallstone, completely filling a moderately sized gall bladder. The woman, a patient of 45, had been injured in a railroad collision, and presented so many subjective symptoms that it was almost impossible to tell what was real, what imaginary, and what, if any, was feigned. She did have some curious subjective signs in the epigastrium, possibly caused by the presence of this stone.

In other cases I have followed the histories with some care. I am convinced that many patients with gallstones who are regarded as having no symptoms, do in reality have symptoms, and symptoms which are significant or should be significant of some impending trouble.

There is one fact that stands out prominently when I review my gall-bladder experiences of the past three years—that fact is the serious pathologic changes sometimes present when the history shows apparently only simple repeated gallstone colics. No matter how confident one may be that the patient is passing at intervals small gallstones—without serious objective or subjective signs, without a suspicion of contractions or other abnormalities of the gall bladder and neighboring structures—the surgeon will often be surprised to find instead of a simple, easy removal of gallstones from a slightly affected or apparently normal gall bladder, a thickened, contracted, adherent, infected gall bladder, and an operation of exceeding danger and difficulty. This possibility which, with increasing experience, can not fail to depress the surgeon in even the apparently simplest cases, adds a strong argument in favor of removing gallstones which are known not only to exist, but to cause few if any local changes.

Local changes of sufficient extent and severity to make operation extremely hazardous are to be considered in connection with other facts in the patient's condition which may contraindicate operation. An easy and brief cholecystectomy might be attempted at the close of a severe abdominal operation when a difficult and prolonged operation would be utterly impracticable.

The final arguments in favor of removing gallstones, which are known to exist and which cause no symptoms, are: First, the known safety of the procedure in the given case, and secondly, the uncertainty of the future in the same case. It will be a matter of almost absolute demonstration in that case what the course of operation will be—an easy and successful operation. What the course without operation in that case will be no man can tell, except that it may be unfavorable. Gallstones never can do good; they may remain at a standstill, and they may suddenly cause irreparable damage. Operation may do harm, but in the favorable case assumed, it is almost sure to be effectual in removing permanently a source of great danger and unbearable suffering.

It is only when gallstones are discovered in the course of other operations that the conditions influencing the prognosis with and without operation can be accurately determined. It is only in this way that gallstones and other conditions of the biliary passages can be said to be or not to be offending. The truth of this proposition seems, therefore, more easily demonstrated than that of the former one that gallstones should be removed as soon as they begin to offend. The prognosis of operation in the former case is dependent on facts demonstrated only at the operation. In the latter the prognosis for operation may be predicted with the greatest certainty possible in surgical cases. The prognosis for medical treatment in some instances of real pathologic changes may, too, be reasonably predicted.

The second question is that of the essential necessity for biliary drainage after operating on the gall bladder or gall ducts.

The advisability of drainage in turn depends on pathologic changes in the biliary tract. Are gallstones in themselves evidence of pathologic changes in this tract? Do these changes, whatever they may be, require in all cases drainage as the most important factor for a permanent cure? The proposition here for discussion is: "All conditions of the biliary tract justifying the opening of that tract demand, as the most important part of the surgical procedure, temporary drainage of that tract."

The evidence in favor of this proposition is based first on the findings of the pathologist, and secondly, on the experience of the surgeon at the bedside. I shall limit myself chiefly to clinical experience. Evidence based on laboratory study of individual cases shows for most operative conditions a bacterial cause. I have presented in previous papers this evidence in my cases, worked up by Dr. William F. Whitney and Dr. Mark Richardson. In some of the cases when least suspected a virulent organism has been found in the biliary tract. In some there has been evidence of previous infection of the most serious kind. Laboratory research has, in many cases, successfully traced a formidable lesion established through years of slow inflammatory processes. In some cases these lesions were in their very inception; in others they were at a stage in which life was seriously threatened. In all cases the severity of the condition could either be plainly traced to an infectious source, or it could be predicted as an ultimate result.

In a word, the pathologic findings in both mild and severe conditions suggest, if they do not demand, in all cases, both in the slighter ones of beginning inflammations and in the more serious ones of later changes, as thorough cleansing of the biliary reservoir, the ducts and the contiguous structures, as it is possible to give them. Such a cleansing is possible only by immediate and long-continued washing out of these tracts by the full, free and persistent escape of bile through the operation wound.

From the clinical standpoint, it seems to me, these views are strongly indorsed. The operative cases on which my own opinions are based have multiplied in the past three years to such an extent that I feel less uncertainty with regard to drainage than before. Briefly stated, the experience is that well-drained cases almost invariably do well. Non-drained cases and cases in which drainage is defective, present a considerable percentage of bad end-results. When bile begins to flow freely and abundantly through the tube, then for the first time the ultimate result begins to look favorable. When bile flows freely through the external wound and also through the intestinal tract, then the ultimate good result seems almost positively assured. Not that the result can always be predicted with certainty. The anatomy of the biliary tract is so extensive and so far-reaching, the modes and variety of infection and of inflammatory changes is so great, that the combinations of lesions are of great diversity. Conditions constantly arise presenting a clinical picture, for which there will

be found no precedent. And yet, in the long run, the clinical observer can not but be impressed by the freedom from these trying complications when there has been a biliary drainage with which he has felt perfectly satisfied.

The conditions which I have observed during the past three years dependent on poor drainage or on no drainage, have been roughly divisible into two classes: First, the cases of cholecystectomy, in which I have ligated the cystic duct and closed the abdominal wound, with two or three days' use of a gauze wick (cigarette drain); secondly, the cases of inflamed and contracted gall bladders, in which I have drained the hepatic duct by direct rubber tubing.

These classes comprise the comparatively normal gall bladders, which I have excised without drainage, and the chronically changed ones, in which drainage has been carried on through the remains of the gall bladder. In the former case there was little evidence of long-continued disease; in the latter, abundant. Drainage in the former was evidently less important than drainage in the latter. Indeed, in the latter, drainage was a necessity; it could not have been avoided. The cases include some unusual ones. In one I drained each primary division of the hepatic duct with a separate tube. In some the gall bladder, as well as the common and hepatic ducts, had each a separate tube. In some no tubing could be used, and gauze wicks were substituted. In a certain number of cases drainage began spontaneously after cholecystectomy and ligation of the cystic duct.

As for the lesion, in a few cases there was no gallstone, the symptoms depending on an infection of bile. In some there was no change apparent to the eye. In some the only change apparent was in the color, viscidity, fluidity and other attributes of the bile itself. In some cases it was impossible to tell beyond a question whether all the gallstones had been removed or not. In many cases a single stone had worked enormous damage; in others hundreds had done but little harm.

The diagnosis of gallstones, when made by even the most experienced clinicians, was shown to be occasionally at fault. In prolonged cholemia, especially without pain, cancer of the pancreas was the common lesion found.

The evil results after operation, excluding the fatal cases, all of which have been caused directly or indirectly by the prolonged results of gallstone disease, have been owing to faulty drainage through the abdominal wound; or if not thus caused, they have been coincident with faulty drainage.

The recurrence of gallstones after free drainage with spontaneous cessation of the biliary flow is not worth mentioning. I have seen hardly a case of this kind; in fact, I can not recall a single one. The recurrence of any symptoms whatever after such a course is extremely unusual.

The recurrence of symptoms after the removal of the gall bladder with ligation of the duct is in my experience not uncommon. I recall five cases in the past twelve months. In one, a second operation was fatal. The original operation was cholecystectomy for gallstone cholecystitis. At the second operation—a very difficult one—cancer was found, hopelessly disseminated. In a second case the patient still has occasional chills, with high fever and grave discomforts. The operation was cholecystectomy for gallstones with gall-bladder infection. A third patient presented, after a comparatively normal cholecystectomy, occasional chills and high fever. A fourth, after the removal of the gall bladder or the remains of it and drainage through the cystic duct, has been seized at almost regular intervals with pain, high temperature and jaundice, with occasional bursts of bile and changed fat through the wound. A fifth has similar symptoms after a similar operation.

Careful inquiry among my patients shows a far better collection of end-results after cholecystostomy than after cholecystectomy. I have learned to dread the third and fourth weeks after cholecystectomy, a period when something alarming seems likely to occur, and to expect sooner or later serious secondary symptoms.

From study and experience, therefore, I am led to the conclusion that the essential thing in the surgery of the biliary tract is full free drainage allowed to persist until it ceases spontaneously.

After permanent drainage through the gall bladder, the occasions for secondary drainage will be lessened, but if necessary the gall bladder may easily be isolated and drained a second time. After closure without drainage, the necessity for secondary operation will be greater. If the gall bladder has been removed, the secondary operation may be extremely difficult and dangerous, the only channels for drainage remaining being the common or hepatic ducts.

Immediate closure of the gall bladder without drainage is, in my opinion, in itself so hazardous that it is to be condemned.

Hernia in the scar, even after drainage, can best be avoided by using a muscle-splitting operation similar to the McBurney incision in chronic appendicitis. I have used it of late in many cases and like the method. Care may in this way be taken to avoid the motor ends of the intercostal nerves. Sufficient time has not elapsed to show permanent results.

Biliary fistula can be prevented only by leaving an unimpeded flow through the hepatic and common ducts into the duodenum. When a fistula persists the chances favor, first, an undiscovered stone; second, obstruction from chronic inflammatory processes in direct contact with the ducts; third, obstructions in the pancreas or at the duodenal papilla.

The existence of a fistula is *prima facie* evidence of obstruction. If long continued, the only relief lies in a second operation for exploration, usually difficult, bloody and unsatisfactory, or in a cholecystenterostomy.

CONCLUSIONS.

1. Gallstones should be removed whenever they are known to exist, whether they offend or not, provided the patient's general and local conditions are favorable.
2. Drainage should be employed until the bile spontaneously ceases to flow through the wound.
3. Hernia in the scar is best prevented by a muscle-splitting incision.
4. Biliary fistula means a common duct obstructed usually by a gallstone, and it requires a second operation to close it or a cholecystenterostomy.

NOTE: The discussion on the papers of Drs. Richardson and MacLaren will follow the paper of Dr. MacLaren next week.

A Law Against the Use of Cocain.—A bill has been introduced in the New York State legislature which goes farther than any other for the prevention of the use of cocain. It forbids the sale of cocain, either at wholesale or retail in any form or in any proprietary preparations, except on the written prescription of a duly registered physician or dentist, and any preparation of cocain or its salts must have a label affixed to the bottle giving the exact contents of the mixture.—*Journal of Inebriety.*

Special Articles.

THE UNITED STATES PUBLIC HEALTH AND MARINE-HOSPITAL SERVICE.

PART II—THE SERVICE AS IT IS TO-DAY.

(*Continued from page 604.*)

(B) PERSONNEL, PAY AND ALLOWANCE.

The officers of the Public Health and Marine-Hospital Service can be divided into three classes—commissioned officers, chiefs of division of hygienic laboratory, and non-commissioned officers. The commissioned officers are the surgeon general, assistant surgeons general, surgeons, passed assistant surgeons, and assistant surgeons. The non-commissioned officers are acting assistant surgeons, sanitary inspectors, internes and pharmacists.

METHOD OF APPOINTMENT.

In order to become a commissioned officer of the service, it is necessary to pass a competitive examination before a board of officers of the service comprising physical, academic and professional tests, and a general average of 80 per cent. is requisite for passing.

The chiefs of divisions of the hygienic laboratory are appointed because of proficiency in the work of the division over which they preside, viz., bacteriology, medical zoology, chemistry and pharmacology.

Acting assistant surgeons and pharmacists are appointed by the Secretary of the Treasury on certification by the Civil Service Commission and recommendation by the surgeon general. Internes are appointed by the Secretary of the Treasury on recommendation by the surgeon general and examination by the medical officers of the stations to which they are assigned.

The following table indicates the numerical strength of the corps:

Surgeon general	1
Assistant surgeons general	6
Surgeons	31
Passed assistant surgeons	36
Assistant surgeons	50
Chiefs of division of the hygienic laboratory	4
Sanitary inspectors	2
Acting assistant surgeons	195
Medical inspectors	2
Internes	12
Pharmacists (first class, 16; second class, 25; third class, 9)	50

PAY AND ALLOWANCES.

The pay of commissioned officers of the Public Health and Marine-Hospital Service is the same as that of officers of similar grades in the Medical Corps of the Army, as indicated in the following table:

Surgeon general	$5,000
Assistant surgeons general	2,900
Surgeons	2,500
Passed assistant surgeons	2,000
Assistant surgeons	1,600

Officers are allowed furnished quarters, with fuel, lights, etc., or in lieu thereof, commutation at the rates of surgeons, $50 a month; passed assistant surgeons, $40 a month; assistant surgeons, $30 a month. When serving outside the limits of the United States, as they existed Jan. 1, 1898, foreign commutation is allowed at the rates of $90, $85 and $80 a month for the respective grades of surgeons, passed assistant surgeons and assistant surgeons.

After five years' service, an additional compensation of 10 per cent. on the annual salary for each five years' service is allowed commissioned officers above the rank of assistant surgeon, but the maximum increase can not exceed 40 per cent.

When an officer becomes unfit for duty by reason of disability or disease not the result of his own vicious habits, he is placed on "waiting orders," and receives 75 per cent. of his salary and longevity pay.

Officers when traveling under orders or on special temporary duty receive actual expenses, not exceeding $5 a day.

There is no regular salary scale for the non-commissioned officers. The various acting assistant surgeons, sanitary inspectors, etc., are paid according to the importance of the posts they occupy and the duties they perform.

REQUIREMENTS FOR ADMISSION TO THE SERVICE.

Original appointments to the commissioned corps are made to the grade of assistant surgeon, after the applicant has complied with the regulations on admission and satisfied the board of examiners as to his fitness. The candidate must be a citizen of the United States, between the ages of 22 and 30, of good moral character, and physically sound. In addition to these requirements, he must present a diploma from a reputable medical college, and pass a satisfactory physical, academic and professional examination before a board of commissioned officers of the service.

If successful, the applicant is either appointed by the President by, and with the advice and consent of, the Senate, or placed on the waiting list to await such appointment, his eligibility being limited to one year. After five years' service, the assistant surgeon is entitled to examination for promotion, and if successful in passing the physical and professional tests prescribed, becomes a passed assistant surgeon.

Promotion to the grade of surgeon is made as vacancies in the grade of surgeon occur, and only after due examination.

ADVANTAGES TO THE RECENT GRADUATE.

This growing service, with its fine record and promising future, is naturally attractive to the young medical graduate. Its perfectly equipped laboratory and opportunities for special study, afforded by foreign details, are also attractive to prospective assistant surgeons. These manifest advantages should not blind the young man to the fact that there is much hard work, of a routine character, to be done, and that the men doing research work at home or abroad, were so detailed because of special aptitude and as a reward for meritorious and energetic effort in the routine work of the service.

The young assistant surgeon is apt to have rather a busy time of it. If he is one who desires a lazy existence, he should avoid the Public Health and Marine-Hospital Service, but if he is energetic and ambitious he will find a plenitude of professional work of all kinds, with ample opportunity for research work in preventive medicine.

The standard of excellence maintained in the service is not entirely due to the rigid requirements of the entrance examinations. The entrance boards, by their conscientious work, are able to select men of promise and high professional attainments, but this is only the first step in the evolution of the trained medical officer from the recent medical graduate.

The superiors of a young officer are always medical men, and their fraternal encouragement and sym-

pathy will do much to develop his best qualities. He will early acquire executive ability by observation of the systematic business methods and attention to administrative details exacted by his superiors, and he will have occasion to exercise this ability and display initiative when placed in command of smaller stations, or when serving on independent details.

(To be continued.)

FOURTH OF JULY TETANUS.

THE EFFECT OF PUBLICITY AND PROPHYLAXIS IN REDUCING THE MORTALITY.

One year ago THE JOURNAL[1] compiled statistics of the accidents of the Fourth of July and their results, developing the fact that at least 415 cases of lockjaw had resulted from these injuries. It is unfortunate that these figures are the only complete ones ever compiled, for in summing up the cost of this year's celebration the number is relatively so small that we are confronted with the problem of determining whether the occurrence of tetanus as a sequel of Fourth of July accidents was unusually high last year, or unusually low this year. Throughout the entire country there has been a general escape from tetanus that seems most remarkable, for the total sum, instead of 415, as it was in 1903, is this year but 105. Our figures have been obtained from the same sources as last year and handled in the same way, omitting all doubtful cases, so that the comparison between the two sets of figures is a fair one, the errors in each presumably being proportional.

In order that errors may be corrected, we publish, as completely as our information permits, the name and the chief factors in each case, as follows:

TABLE I.

	NAME.	AGE.	CAUSE.	SITE.	DURATION* IN DAYS.	RESULT.
	CALIFORNIA.					
1.	Redmond, Joseph	14	bl. ctg.	hand	8	D
2.	Bruzzone, J	9	cracker.	hand	12	D
3.	Cota, L.	11	bl. ctg.	hand	4	D
4.	Ellison, T.	Adult	cracker.	hand	7	D
	ILLINOIS.					
1.	Milkie, H.	12	bl. ctg.	hand		D
2.	Johnson, L.	12	cracker.			D
3.	Dice, E.	15	bl. ctg.	hand		
4.	Muto, Papino	11	bl. ctg.	hand	12	D
5.	Wieceric		cracker.	hand	9	D
6.	Engle, Emil	14	bl. ctg.	arm	8	D
7.	Hudsinsky	23	bl. ctg.	side	8	D
8.	Koski	16	bl. ctg.	hand	8	D
9.	Rizzo	8	cannon		8	D
10.	Koch	18	cracker.	hand	8	D
11.	Tate, Jos.	20	bl. ctg.	hand	20	D
12.	Ceron, Jno.	13			10	D
13.	Shafer, P.	10	bl. ctg.	hand	10	D
14.	Reg. A. T.	14	bl. ctg.	hand	10	D
15.	Huber, H. M.	12	bl. ctg.			D
	INDIANA.					
1.	Kirchner		bl. ctg.	hand	11	D
2.	Holzer.	14	bl. ctg.	hand	10	D
3.	Snell.	15	cracker.	hand	10	D
4.	Cochrane		bl. ctg.	hand	11	D
5.	Campbell	12	bl. ctg.	hand	10	D
6.	Twaddle	15	bl. ctg.	hand	7	D
	IOWA.					
1.	Drebenstedt	19	cracker.	face		R
2.	Davenport	13	bl. ctg.	hand	9	D
	KANSAS.					
1.	Sullivan	16	bl. ctg.	hand	7	D
	KENTUCKY.					
1.	Tressler	16	cracker.	leg	8	D
2.	Faulkner	9	bl. ctg.	hand	7	D
	MAINE.					
1.	Reed, H	10	bl. ctg.	hand	6	D
2.	Fortier	10	bl. ctg.	hand	6	D
3.	Boothby	18	bl. ctg.		7	D
4.	Stevens, P.	10		hand	7	D
	MASSACHUSETTS.					
1.	Dalton, Thos	20	bl. ctg.	hand	10	D
2.	Hunt, T. P.	11	bl. ctg.	hand	11	D
3.	Romano	8	bl. ctg.		6	D
4.	Morris, R. M.	9	bl. ctg.		7	D
5.	Bunnell, H. E.	25	cracker.	hand	11	D
	MICHIGAN					
1.	Schroeder	12	bl. ctg.	knee		R
2.	Schreck	10				R
3.	Peterson	15			9	D
4.	Kretsch		bl. ctg.			
5.	Rogers	adult	bl. ctg.		14	D
6.	Dickinson	adult	bl. ctg.	hand		D
7.	Davis	14	pinwheel	hand	9	D
	MINNESOTA.					
1.	Drake, Wm.	12			20	D
2.	Friedman, Esther	12	bl. ctg.	hand	7	D
	MISSOURI.					
1.	Walz	14	bl. ctg.	hand	9	D
	MONTANA.					
1.	La Belle	32	cracker.	hand	15	D
	NEBRASKA.					
1.	Flils, A.	adult	cracker.	hand	21	D
2.	Green, Edw	34	bl. ctg.	hand	6	D
3.	Langdale	11	bl. ctg.	leg	13	D
	NEW JERSEY.					
1.	Levinsohn	10	cracker.	hand		R
2.	Wiltsey	14	bl. ctg.	hand		D
3.	Stang	42	bl. ctg.	hand	7	D
4.	Preitschat	53	cannon	foot.	9	D
5.	Cuff	13	bl. ctg.	hand	11	D
6.	Mondorff	11	bl. ctg.	head	14	D
7.	Streeter	12	bl. ctg.	hand		D
8.	Johnson, S.	15	bl. ctg.	hand	9	D
9.	Decker, H.	12	bl. ctg.	hand		D
	NEW YORK.					
1.	Weeks, Chas	9	bl. ctg.	hand	6	D
2.	Ward, Jas.	6	bl. ctg.	hand	13	D
3.	Pickslay, Clara		bl. ctg.	hand	16	D
4.	Perera, G.	25	cannon	hand	13	D
5.	Jacobs, H.	13	bl. ctg.	hand	8	D
6.	Austin, E.	18	bl. ctg.	hand		D
7.	Champagne	12	cracker.	hand	10	D
8.	Smith, Emma	19	cracker.	hand		
9.	Waterman	6	bl. ctg.	hand	9	D
	OHIO.					
1.	Booth, W. K	17	bl. ctg.	hand	9	D
2.	Van Camp	15	bl. ctg.	hand	11	D
3.	Ferguson	30	cracker.	face		
4.	Noell	12	bl. ctg.	hand	10	D
5.	Wiggins	12	bl. ctg.	hand	9	D
6.	Woods, H	21	cracker.	hand	9	D
7.	Veon	12	bl. ctg.	hand	6	D
8.	Toenisson	10	bl. ctg.	hand		
9.	Drescher	36	bl. ctg.	hand	16	D
	PENNSYLVANIA.					
1.	Smith, Raymond		bl. ctg.	hand	17	D
2.	Shill, B.	13	bl. ctg.	hand	7	D
3.	Gutschock	21	bl. ctg.	hand	7	D
4.	Yeager, A.	8	bl. ctg.	hand	10	D
5.	Sirson	7	bl. ctg.	hand	14	D
6.	O'Neil, Jas.	11	bl. ctg.	hand		
7.	O'Toole, Thos.	11	bl. ctg.	hand		
8.	Jenta	14	bl. ctg.	hand	6	D
9.	Lutz, H. J	16	bl. ctg.	hand	10	D
10.	Crutchley	12	bl. ctg.	hand	12	D
11.	Rowlands	9	bl. ctg.	hand		
12.	Milinsky	14	bl. ctg.	hand	6	D
13.	Baker, Chas	11	bl. ctg.	hand		D
14.	Pressly.	17	cannon	foot.	8	D
15.	Koechli	8	bullet			D
16.	Sager	9	cracker.	hand	6	D
17.	Rickhard	10	bl. ctg.	hand	11	D
	UTAH.					
1.	Barber	18	cracker.	hand		R
	VERMONT.					
1.	Cross, Ernest				9	D
2.	Duchaine	9	bl. ctg.	hand		D
	WASHINGTON.					
1.	Jones, A. L.	8	cannon	breast	15	D
	WISCONSIN.					
1.	Weigt	11	bl. ctg.	leg		D
2.	Lillis	15	bl. ctg.	hand	9	D
3.	Schreck		bl. ctg.	hand		D
4.	Petersen	14	bl. ctg.	hand	8	D

*Including the time between the receiving of the wound and death.

Arranged for comparison with last year, state by state, we can appreciate how general this improvement has been by referring to Table 2.

Going over the history of tetanus epidemics as recorded in the statistics of various health departments in several of the larger cities for several years past, we are forced to the conclusion that the apparently very great mortality of last year was not greatly in excess of what it usually has been, taking the country as a whole. In some places it was probably unusually frequent, as in Pennsylvania and some cities of Ohio, but in other places, where records of previous years were kept, it was apparent that last year was nothing unusual in this respect. For example: In 1900 Chicago had 22 deaths

1. THE JOURNAL A. M. A., Aug. 29, 1903.

from Fourth of July tetanus, while last year there were about 16, and the preceding year 12. New York City, in 1899, had nearly 20, which was, if anything, in excess of last year. The tetanus record of 1903 was only apparently large, due to the fact that it was the first time that all the cases in the country were ever collected and published in their enormous total. There is every reason to consider, therefore, that the deaths from this cause during the epidemic of this year represent an actual decrease from the ordinary course of events. Cities in which previously each Fourth has been followed by from 5 to 10 cases of lockjaw, have this year escaped without a single case. Last year Toledo had 8 deaths and this year none; many other cities show a similar escape. Chicago had but 5 deaths from tetanus originating in blank-cartridge wounds, which is, with but one exception, the lowest record ever made by that city. All over the country the story has been the same: "The least number of accidents in any year we can remember, and no tetanus."

TABLE 2.

	1903.	1904.
California	2	4
Colorado	4	0
Connecticut	3	0
District of Columbia	1	0
Idaho	1	0
Illinois	40	15
Indiana	11	6
Indian Territory	1	0
Iowa	14	2
Kansas	11	1
Kentucky	4	2
Maine	2	4
Maryland	1	0
Massachusetts	16	5
Michigan	29	7
Minnesota	15	2
Missouri	29	1
Montana	2	1
Nebraska	4	3
New Hampshire	2	0
New Jersey	8	9
New York	36	9
Ohio	67	9
Oregon	2	0
Pennsylvania	82	17
Rhode Island	3	0
Utah	0	1
Vermont	3	2
Washington	2	1
West Virginia	3	0
Wisconsin	10	4
Total	415	105

What is the cause of this splendid improvement? Is it not the result of unusually unfavorable conditions for the tetanus bacillus instead of any cause dependent on other factors? Again, it is to be remembered that it occasionally has happened that for some reason that can not be detected there has been a local escape from Fourth of July tetanus during some years. For example, in 1901 there were but 4 deaths in Chicago, and 5 in New York, far below the usual number for each city, and without evident reason. May not this year be a similar exception? We have gone over all possible sources of information to decide this point, utilizing reports from hospitals, newspapers, medical journals and correspondence, and the conclusion reached has been against either of these explanations. That it is not due to an unusual infrequence of the tetanus bacillus is quite conclusively shown by the fact that during the month of July of this year tetanus from wounds other than those incurred in celebrating the Fourth, has been very frequent, if anything, more so than usual. Last year, among the reports received, were 15 of tetanus from simple injuries; this year there were 55, nail wounds, compound fractures and other injuries having frequently had this fatal sequence.

The decrease in the disease has also not been local, but spread generally throughout the country. Rather, it would seem, the improvement is due to two very essential factors—decrease in the number of wounds received during the celebration of the day, and better care of the wounds that were received.

Almost without exception our reports from all places have indicated that the number of wounds was unusually small. The statement often received from hospitals has been: "This year we had made unusual preparations to care for Fourth of July injuries, on account of the frequence of tetanus last year, but were agreeably disappointed in having almost no cases." The decreased number of injuries seems to depend entirely on the "campaign of education" that has been going on this year as never before. Always the daily papers have done a great deal in the way of warning the public of the dangers of Fourth of July celebrations, and urging improvements in its manner of celebrating, but never with such a grand unanimity as this year.

When the epidemic of last year was sweeping the country there arose a general demand that such things should be prevented, but it was a repetition of the annual cry, a little increased in force. When THE JOURNAL published the summary of the celebrations' cost in life and blood—466 dead and 3,983 injured—a new impulse was given to the receding wave of public indignation.

LOCAL ORDINANCES TO PREVENT SALE OF EXPLOSIVES.

Fortunately, this did not spend itself in clamorings last autumn, when there was little that could be done because of the remoteness of the next celebration. The lesson had been too costly to be easily forgotten. One by one events happened to call attention to the need for improvement. In this city and in that, new ordinances were adopted to make possible some effective control of the sale of dangerous weapons and explosives. The public interest in the topic had become sufficient to warrant correspondents putting accounts of the passing of these new laws on the press wires, and so they aroused attention at frequent intervals throughout the entire country. Many medical societies passed resolutions urging the passing of new laws or the enforcement of existing ones, quoting the above figures as impressive evidence of the need of a change; these resolutions were published in the daily press, often accompanied by editorial comment, and in this way the matter was stirred up from another side.

Then the press itself took an active interest in the matter; doctors and hospitals were visited, and from them good, sound facts and figures were obtained which were worked up into more or less fanciful "stories" by the versatile reporters. We have before us stacks of clippings of articles, published in advance of the Fourth, which make it seem that scarcely a paper in the "tetanus belt" failed to sound an alarm. In Chicago some public-spirited citizens attempted to control the celebration of the Fourth entirely, and incorporated an association for that purpose. Although it did not receive sufficient financial support to enable it to carry out its large plans, yet it aroused much interest and discussion, and its war cry, "A Sane Fourth," became a by-word. With all these factors at work, it is difficult to see how any person who reads the daily papers—and who does not—could have escaped learning that the Fourth is a serious affair, and that blank-cartridge wounds are dangerous sources of lockjaw.

EDUCATION OF THE LAITY.

The outcome was threefold: First, there was the

birth of new ordinances in many cities, giving power to the authorities to control the sale of blank cartridges and pistols to minors; or the removal of dust and other incrustations of disuse from the ordinances of other cities where such laws had lain dormant.

Secondly, there was made the beginning in the development of a public spirit that was willing to have the laws enforced, so that not a few prosecutions of sellers of firearms to minors were made. Thirdly, parents were incited to a more careful supervision of the ways and means of celebration by their children, and even the children themselves often obtained some slight education from their school teachers or parents. Consequently, the day passed off with a much smaller number of accidents than had been generally anticipated.

In the same way the knowledge of the necessity for very thorough treatment of Fourth of July wounds to prevent the development of tetanus grew among the public, while active campaigning on the part of the medical journals achieved the same results among the physicians. For the first time there became something like a general appreciation of the fact that every blank-cartridge or fire-cracker wound is a most likely source of lockjaw. This is well reflected in the newspaper clippings. A year ago the statement would generally be made that: "Eddie Smith shot himself in the hand with a blank-cartridge pistol. The wound is not dangerous." This year such statements were seldom seen, but usually they finished with: "There is great danger that lockjaw will result." Frequently also would be added: "Dr. A., who dressed the wound, has sent for some antitoxin, which will be administered as soon as it arrives, in the hope that the onset of lockjaw can be prevented." The sudden change in the situation in one year, as shown by comparing the clippings of last year with those of this July, is indeed remarkable and fortunate; it has probably saved two or three hundred lives.

From the reports received it is safe to say that more blank-cartridge wounds were cleaned out under anesthesia, and more doses of antitoxin given prophylactically than after all the Fourth of July celebrations of previous years together. Most of the city hospitals and dispensaries that treat large numbers of accident cases equipped themselves with antitoxin before the Fourth, and injected it into patients with this class of wounds, in addition to unusually thorough surgical treatment of the wounds themselves.

The results were manifest. So far as we have been able to learn from a number of sources, not a single patient so treated developed tetanus. The most conclusive statement that we have received comes from St. Louis It will be noticed that Missouri shows the greatest improvement of any state in the country, practically eliminating Fourth of July tetanus this year, when but one case was reported, as against 29 last year. Most of these 29 deaths of a year ago occurred in the two large cities, St. Louis and Kansas City, as was the case in all the states, the cities furnishing most of the deaths. The following letter explains plainly enough why Missouri escaped:

CITY OF ST. LOUIS HEALTH DEPARTMENT,
ST. LOUIS, MO., Aug. 12, 1904.

To the Editor:—Replying to yours of the 10th inst., I have to state the following: There were treated in the City Dispensary 36 cases of gunshot wounds, without a single death from tetanus. A few days prior to the Fourth of July I issued an order to the city dispensaries to the effect that every case in which there was a possibility of tetanus occurring should be injected with antitetanic serum. This order was faithfully carried out, with the result above noted.

Last year, out of 56 cases treated there were no less than 16 deaths. In a few days I shall be in possession of a report from the chief dispensary physician, and if you so desire I shall be glad to mail you a copy.

J. H. SIMON, M.D., Health Commissioner.

The lesson is plain.

An interesting bit of corroboration of the effect of the campaign of education may be brought out by the following fact: The reduction in the number of deaths this year occurred in the large cities rather than in the country. As near as can be estimated the deaths in the country towns were over half as abundant as last year, while the large cities reduced theirs to zero in many instances, and by 75 to 90 per cent. in most of the others. The city populace, both lay and medical, is more quickly reached by campaigns of this kind because of the more general circulation of the newspapers; also a large proportion of the city poor with such wounds go to hospitals and dispensaries which are prepared to give them the treatment they need. The injured boy in the country is more likely to receive "home treatment," and quite unlikely to obtain surgical treatment.

For all of the reasons given above, we must conclude that the reduction in mortality is the result of a decreased number of dangerous wounds, and better care of those that were received, both conditions being due to a more general appreciation by both profession and laity, of their very great danger.

DISTRIBUTION.

Considering this year's epidemic by itself, and also comparing it with that of last year, we notice that there has been some change in the matter of distribution. Pennsylvania leads, as it did last year, with 17 deaths, as compared with 82 a year ago, a decrease of nearly 80 per cent. In last year's epidemic 17 cases in one state would have put it in seventh place Illinois passes from third in the list to second, although the actual number of deaths, 15, represents a decrease of 70 per cent. from the 49 of last year; this is because Ohio dropped from 67 to 9, an improvement of over 86 per cent., putting it in a tie with New York and New Jersey, Ohio's improvement, like that of Pennsylvania, Missouri and the other states, being due particularly to efforts by the organized forces of the larger cities. Last year Missouri and Michigan were tied in fifth place, with 29 deaths each, and although Michigan reduced the deaths by 75 per cent., her 7 is much above Missouri's remarkable reduction to 1 death. Four of the states show an increase: New Jersey from 8 to 9, California from 2 to 4, Maine from 2 to 4; Utah has 1 death this year, while last year it had none.

The number, however, is so small in each that the increase is to be regarded as accidental. It is easily possible for such numbers of cases to escape collection entirely one year, and to be collected another year. As always, the southern states escape because of a less and a different celebration.

AGE OF VICTIMS.

Age is, of course, low, yet not a few adults suffered the penalty of playing in the thoughtless manner of youth, while others were injured in accidents that they could not avoid. A very few girls also met with accidents of the same kind.

NATURE OF THE WOUND.

Again, the blank cartridge asserts itself as the cause

par excellence of tetanus. Of the cases on which information on this point could be obtained, there were 74 from blank cartridges, 18 from cannon fire crackers, 5 from cannons, 1 from bullets, and 1 from a pin-wheel, or 74 per cent. from blank cartridges. A year ago, however, there were 358 blank-cartridge wounds against 29 from other causes, of which 17 were cannon crackers and 5 cannons.

This shows a great reduction in the number of blank-cartridge cases, with the cannon crackers and cannons holding their own. It would be interesting to know if this was because particular attention was directed to holiday, a total of 183 deaths. The casualties from the same cause which did not result in death number 3,986, or 3 less than the figures recorded for 1903. Of these, 349 were of a relatively graver nature, and included 19 cases in which the victim was totally blinded, 61 cases of loss of sight of one eye, 61 cases of loss of leg, arm or hand, and 208 cases in which amputation of one or more fingers was necessitated. These figures are slightly in excess of the corresponding items of last year. It is noteworthy that the deaths from causes outside of tetanus are increased more than 50 per cent., but no satisfactory cause can be adduced for this increase.

TABLE 3.—SUMMARY BY STATES OF JULY FOURTH CASUALTIES.

STATE.	Deaths.			Injuries.						Total Persons Dead or Injured.	Causes of Tetanus Cases.		Causes of All Cases Aside from Tetanus Cases.				
	From Tetanus.	From Other Causes.	Total.	Loss of Sight.	Loss of One Eye.	Loss of Leg, Arm or Hand.	Loss of Fingers, One or More.	Other Injuries.	Total Non-fatal Injuries.		Blank Cartridge.	All Other Causes.	Blank Cartridge.	Fire Crackers.	Cannon.	Gunshot.	Powder and Fireworks.
Alabama		1	1			1	1	4	6	7			2	2	1	1	1
Arizona																	
Arkansas																	
California	4	5	9	1	1	3	3	121	129	138	2	2	23	43	13	10	45
Colorado							2	42	44	44			22	8		2	10
Connecticut		4	4		1		5	123	129	133			30	36	15	16	33
Delaware				1				4	5	5				3	2		
Dist. of Columbia		1	1					9	9	10				6		3	1
Florida								2	2	2			1	1			
Georgia																	
Idaho								4	4	4			2	2			
Illinois	14	8	22	2	6	5	20	368	401	423	10	3	103	154	41	41	70
Indian Territory																	
Indiana	6	5	11	3	7	5	5	180	200	211	5	1	50	71	14	9	61
Iowa	1	1	2		4	1	8	122	135	137	1	1	32	45	16	10	23
Kansas	1	3	4	1			1	81	84	88	1		28	23	11	7	18
Kentucky	2	2	4	1	1	1	4	61	68	72	1	1	18	14	14	7	17
Louisiana								2	2	2					1	1	
Maine	4		4		1	2	2	23	28	32	3		8	12	2	4	2
Maryland		1	1					21	21	22			8			4	8
Massachusetts	5	2	7		1	2	8	175	186	193	4	1	37	74	13	15	49
Michigan	4	2	6	1	1	3	13	133	151	157	4	1	37	51	25	10	30
Minnesota	2	1	3	2	3		8	85	98	102	1		19	36	9	6	29
Mississippi																	
Missouri	1	3	4		2	2	7	69	80	84	1		31	17	3	4	28
Montana	1	2	3		1	1	2	10	14	17		1	1	7	4	3	1
Nebraska	3	1	4		7	1	5	46	59	63	2	1	18	14		14	14
New Hampshire							3	20	23	23			1	5	4	2	5
New Jersey	8	7	15		2	3	8	175	188	204	7	2	35	45	24	33	59
New Mexico						1		3	4	4					2	1	1
New York	8	14	22	1	5	7	22	492	527	549	6	3	33	142	66	92	108
Nevada								1	1	1		1				1	
North Carolina																	
North Dakota						1	2	5	8	8			1	6			1
Ohio	7	8	15	3	8	6	18	277	312	327	7	2	77	129	146	15	54
Oklahoma								3	3	3			1				2
Oregon		1	1	1			2	9	12	13				2	1	2	1
Pennsylvania	13	13	26	2	8	11	34	663	718	744	14	3	147	187	47	74	276
Rhode Island								30	30	30			4	7	7	5	7
South Carolina																	
South Dakota								10	10	10			1				9
Tennessee								1	1	1							1
Texas								2	2	2							2
Utah		3	3					19	19	22		1	1	8			13
Vermont	2		2				1	11	12	14	1		4	6	1		1
Virginia		3	3					8	8	11				1		7	3
Washington	1		1			1		21	24	25		1	3	5	1	3	12
West Virginia							2	14	16	16			1	12	2		1
Wisconsin	4	1	5		2	3	19	186	210	215	4		42	83	23	3	60
Wyoming								2	2	2			1	1			
Total	91	92	183	19	61	61	208	3637	3986	4169	74	25	931	1268	508	406	1056

the dangers of blank cartridges and their wounds as a cause of lockjaw, but no way of ascertaining this is possible. As usual, most of the wounds were in the hands, with occasionally one in the leg or other part of the body.

DEATHS AND INJURIES ASIDE FROM TETANUS.

In connection with the above statements, the facts submitted in Table 3 are of great interest. This table summarizes the injuries of all kinds, including tetanus, received in the celebration of the Fourth of July. It shows that in addition to the 91 deaths due to tetanus, 92 individuals gave their lives as sacrifices to the national

Blank cartridges, toy pistols and dynamite canes caused 931 injuries, or nearly 378 less than were recorded from this cause last year. Firecrackers caused 1,268 casualties, or 116 more than last year. Accidents from careless handling and explosion of cannons and toy cannons caused 508 casualties, or 111 more than in 1903. The number of accidents from gunshot wounds shows a marked increase this year, the respective figures, as compared with those of 1903, being 406 and 236, an excess of 170 for the present year. Casualties from powder and fireworks numbered 1,056, an increase of 325 over the figures for 1903.

We consider that the increase in the number of nonfatal injuries reported does not indicate that more injuries occurred this year than last, but we think that it is due to the fact that more attention was paid to the subject this year, owing to the agitation of the subject through the efforts of THE JOURNAL, in which nearly every newspaper in the country assisted. This interpretation of the figures shown does not apply, however, to the 50 per cent increase in the number of deaths from causes aside from tetanus, for such a death is pretty sure to be chronicled.

A detailed list has been compiled of the 4,449 persons dead or injured, giving the name or description of each, the nature of the injury and the cause. These are classified under cities and states, and from this list Table 4 has been prepared. Only such cases have been listed as presented names and data, or, in the absence of the name, a case has been included when it bore such marks of identification that it could be distinguished from other cases in the same city. All doubtful cases have been omitted, as well as injuries from runaways, fright, fires or other indirect injuries, even though the cause of the accident was a firecracker or other explosive.

The first column of *causes*, that of blank cartridges, includes blank cartridges and toy pistols, also a large proportion of injuries from the use of the cartridge cane

DURATION AND PROGNOSIS OF TETANUS.

As is usual with children, the period of incubation and the duration of the disease are usually short, although in the series for this year the time seems to be somewhat longer than last year, which may be more apparent than real, and due, perhaps, to the greater number of adult victims. A very early onset and a rapid course is frequent in these cases. The prognosis seems to have been bad, fully as bad as last year. In a number of the cases of our series we were merely informed that the patients had developed tetanus, but for one reason and another did not succeed in learning the final outcome. All such cases we have left blank in the "result" column. Of definite recoveries we have information concerning but four, while two others were reported as "recovering."

This corresponds closely with the record of last year, when we learned of 7 actual recoveries among 415 cases, and shows only too conclusively the hopeless nature of Fourth of July tetanus, once it has developed. We have also very positive evidence that it is much more fatal than tetanus from other wounds, for during the same period of time we learned of 55 cases produced by ordinary accidents, such as nail wounds, compound fractures, etc., of which 10 recovered, and in 8 the result was not learned, making the mortality approximately 80 per cent.

The reasons for this greater mortality in Fourth of July tetanus are probably two-fold: First, the average age of the patients is somewhat younger, yet not so much so as might be imagined, for a very large proportion of the every-day cases is furnished by the barefooted boy who steps on nails, glass and slivers.

Second, and perhaps most important, is the nature of the wound. As we have pointed out in other articles, the great amount of tissue laceration, necrosis and hemorrhage furnishes ideal conditions for the multiplication of the tetanus bacillus, with a correspondingly large quantity of toxin produced and absorbed. It would seem that no great improvement in the treatment of tetanus has been made, but this matter we will discuss later under the heading of treatment.

THE CAUSE OF FOURTH OF JULY TETANUS.

In our article of a year ago we discussed very thoroughly the question of the origin of the infecting bacilli, because there had been a great deal of controversy as to whether the bacilli were contained in the cartridges themselves. After considering the evidence available for each side of the question, we came to the conclusion that there was no convincing evidence that blank cartridges contain tetanus bacilli, except possibly as a rare contamination when they have been exposed to dirt. On the other hand, there was abundant evidence that they were present in the street dirt and on the persons and clothing of the injured people. The most reasonable assumption at that time was, therefore, that the organisms are carried into the wounds from the surface at the time of the accident. Since that time there have been no developments calling for any modification of this view.

Occasionally brief notices have appeared that this or that person has found tetanus bacilli in blank cartridges, but so far as we have been able to learn no definte reports of such findings have found their way into medical literature. While there is no particular reason why tetanus bacilli may not be found in blank cartridges, still there is no particular reason why they should be there. The raw materials of which the cartridges are made are not such as to render them likely occupants of the cartridge, and the method of manufacture is such as to make their destruction almost certain.

The popular idea of the presence of dirt in the powder or dirty straw in the wads seems unfounded. It is on record that 759 cartridges, representing all makes, have been examined by Wells, Taylor, La Garde and the Boston City Health Department, all with negative results. The incomplete reports of positive findings may be due to the occurrence of the forms of pseudotetanus bacilli, described by Bain and by Wells, which, without animal experiments, might readily be mistaken for the pathogenic form, although they themselves are harmless saprophytes.

The great danger of blank-cartridge wounds seems to lie not in the presence of the specific organisms in the cartridges, but rather in the favorable nature of the wound. As we have explained more fully in previous articles, their form and location favors ideally the development of these anaërobic organisms, and they are received at a time of year when tetanus is most abundant, and by persons who are particularly well supplied with the germ-ladened street dirt.

That this year 26 per cent. of the cases came from wounds made by giant crackers, cannons and bullets, would seem to indicate that the blank cartridge has no monopoly on the bacillus if it is contained in the explosive, as some have maintained. The only thing these different explosives possess in common is the powder, yet we do not hear of tetanus following the very abundant accidents in which hands and faces are burned with powder and often blown full of the grains. And also, it should be remembered that 55 cases of tetanus produced by simple injuries were brought to our attention during the month of July. All these considerations make it seem more probable than ever that in most, if not in all instances, the infecting bacilli come from the dirt carried into the wound, and not from the explosive itself.

PREVENTION AND TREATMENT.

The history of the past two years shows plainly that something can be done in the way of prevention, and

also that a good start has been made in the right direction. It now remains to be seen if progress will continue. Unquestionably, the proper point of attack would be the prevention of the wounds which cause the disease, and this can be achieved only by preventing the use of pistols, cannon crackers and cannons. Had this been done this year there would have been but one death from lockjaw as a result of the celebration. Enough was done, however, to certify to the feasibility of the enforcement of laws in this direction.

The enforcement of laws, however, rests always on the state of public sentiment, and no better illustration could be offered than the experience of the city of Toledo. Last year Toledo suffered in proportion to population more than any other city in the United States, losing 8 lives from lockjaw, besides having many other injuries. This year Toledo not only escaped loss of life, but also suffered no accidents whatever, and the dependence of this on the state of public sentiment is conclusively shown by the following letter:

DEPARTMENT OF HEALTH, CITY OF TOLEDO, O., Aug. 6, 1904.

To the Editor:—Your letter of the 5th inst. in regard to Fourth of July mortality at hand and contents noted.

It is a great pleasure to me to report that there was not a single fatality of any kind following our Fourth of July celebration, nor were there reported to us any injuries which did not prove fatal.

Indirectly, this condition of affairs resulted from an ordinance passed by the City Council regulating explosives, though it must at the same time be borne in mind that our late mayor, Hon. Samuel M. Jones, was on his death bed, and, as he had expressly wished for a quiet Fourth, and had been the leading spirit in the passage of this ordinance, the love that the people of the city bore him caused them to be unusually careful.

W. W. BRAND, Health Officer.

The improvement in the cities as compared with the country may, in part, be due to the possibility of police regulation of the sale of dangerous explosives, and just as the laws were enforced so the city escaped or suffered. For example: Chicago enjoyed a great decrease in mortality, but still lost five lives from blank-cartridge wounds, corresponding to a much-improved but still somewhat defective control of this sale. This is shown by the investigation by one of the daily papers, which has always taken an active interest in this subject, reported as follows:

An investigation made yesterday by the *Tribune*, with the aid of a 14-year-old boy who did not appear to be more than 11 years of age, showed that the law generally was ignored. Within a few hours this boy purchased in small stores located in different sections of the city three cartridge toy pistols, one paper cap toy pistol, fifteen cannon crackers of various sizes, and three explosives which the woman shopkeeper said she thought were "cannon crackers," although she did not know just what they were.

In each of the stores where the boy purchased the toy pistols cannon crackers also were on sale. At a number of places visited he was refused pistols or cannon crackers on the ground that the Fourth of July does not come until Monday, or because they "had sold one and got into trouble over it." At several stores he was denied cannon crackers but was offered sky rockets and other fireworks, the sale of which is forbidden by section 676 of the municipal code of 1897, although this section of the ordinance is not enforced during the Fourth of July season.

The territory covered included only a portion of the south side, and the north side to North avenue. In only one north side store was the boy able to buy either a toy pistol or a cannon cracker. He secured a paper cap pistol at Bachrach's, in North Clark street. All of the other dealers in this section either declared they had no cannon crackers or toy pistols, or that they were not allowed to sell them to minors.

Compared with our experience of a year ago, this shows a decided improvement, although still far from the right state of affairs. It seems to have been about the same in most of the other cities.

What is now to be dreaded is that even the partial correction of this crime of selling pistols and giant crackers to children that has been accomplished this year may not be continued next year. There is no question that the manufacturers stand ready to supply and to push the sale of these death-dealing toys, regardless of consequences, and unless the agitation continues, the candy and notion store will supply the materials for self-destruction as before. Undoubtedly, the proper place in which to check the trouble is in the manufactories themselves. Not until there exists laws prohibiting the manufacture and importation of toy pistols, blank cartridges, giant crackers, and any other equally fiendish instrument of disorder that can be devised to take their place, shall we be free from a greater or less annual epidemic.

Vigorous efforts on the part of the authorities of each community can decrease the severity of the epidemic, but so long as these things are obtainable small boys will die of lockjaw. It is in such matters as this that a medical representative in the higher branches of government could accomplish much for preventive medicine. We would repeat the suggestion that the Association take up this matter at its next meeting, and attempt to arrive at a means for securing legislation directed toward the prevention of manufacture or sale of these articles. As they have no use whatever outside of purposes of celebration there can be no logical reason for insisting on their production, except the demands of commercial enterprise.

The children will have plenty of means left for celebration in the way of torpedoes, small fire crackers, pistols shooting the harmless paper caps, and display fireworks. The chief nerve-rackers of the day would be gone, and the substitution of a "sane Fourth" might become a possibility, using methods of celebration of our real national holiday better adapted to inculcate patriotism than are those now in use, which smack more of red anarchy with its bombs and pistols.

In the meantime, let us as a profession encourage and aid in all ways the efforts of the daily press to educate the public to the dangers of present conditions, that the progress made this year may be continuous.

Antitoxin.—The prophylactic treatment of all blank-cartridge, giant-cracker and other similar wounds of the Fourth has been demonstrated to be positively successful many times before, but probably never on so large a scale as this year. Not only was thorough cleansing of the wound by vigorous operative measures enforced with great success and frequently, but prophylactic injection of antitoxin was employed in more cases than ever before. In many large cities the hospitals and dispensaries were provided with antitoxin before the Fourth and used it on all cases of injuries of this character, and not a few private practitioners used it in cases coming into their care. We have now records of upwards of a thousand administrations of antitoxin in this way without a single untoward result of any importance, and without a single case of tetanus developing. What motive can there be, therefore, in treating a Fourth of July injury without the prophylactic injection? The cost can not be a consideration when the danger is considered on the

one hand, and the abundant sources of charity for those actually unable to afford it on the other. Let us repeat the figures of the St. Louis health commissioner: Last year, of 56 blank-cartridge wounds treated by ordinary means, there were 16 deaths from lockjaw. This year 36 similar wounds were treated with antitoxin injections without a single death. What could be more conclusive than that? And also, in the Harlem Hospital, there were treated 100 pistol wounds without a single case of tetanus following, antitoxin being used freely.[2]

But what is to be said of physicians who saw blank-cartridge wounds this year, washed off the surface, applied a dressing, and told the parents that there was no danger? There were several, how many we can not know, but a good many of the 105 who died from tetanus owe it to the "care" of such men as these. If at this time there is a man practicing medicine who does not know how to treat a blank-cartridge wound, what is he fit to treat?

We can add nothing to the suggestions made before the Fourth.[3] Thorough exploration of the wounds, removal of every particle of foreign matter and necrotic tissue, and free drainage from the bottom is the only rational and safe procedure, followed as soon as possible by an injection of 5 to 10 c.c. of tetanus antitoxin. It has been suggested that dry powdered antitoxin be sprinkled over the wounded surfaces, but the operation of injection is such a simple one and so much more certain that it seems to us far better, particularly as we have learned of one case of the use of the antitoxin powder that was followed by tetanus. As this method of treatment is so absolutely efficacious the 105 deaths from tetanus mean just so many instances of criminal neglect or carelessness on the part of some one, usually, but not always, the patient or his parents.

We can not boast of the results of the treatment of these cases, with a mortality between 95 and 98 per cent., but so far as we have learned, in but a few were any of the more advanced methods, described in the article referred to, given a fair trial. Many of the patients first received medical treatment less than twenty-four hours before their death, being in the last agonies of acute tetanus. Most of the others were treated in the usual way, with sedatives and subcutaneous use of antitoxin. In view of the ineffectiveness of this method, it is well to discard it for anything that promises better, and according to the results so far obtained, the most hopeful method consists in the injection of the antitoxin into the spinal canal, preceded by withdrawal of as much as possible of the toxic cerebrospinal fluid, and accompanied by injection of antitoxin into the large nerve trunks leading from the injured part. The details of this treatment will be found in our article of June 18, 1904.

Injection of Salt Solution.—The salt solution advocated by Mathews, which depends largely on the effect of the calcium it contains in lessening muscle irritability, has been used, to our knowledge, in one case of blank-cartridge tetanus. A marked lessening of the rigidity was observed and the force of the contractions greatly lessened, so that the boy seemed in a fair way to recover from the tetanus, but unfortunately he developed an aspiration pneumonia and died on the fifth day, so that the final result of the injections can not be determined. One case of tetanus following a barbed-wire injury treated in this way in Iowa during July has recovered. As the solution does not interfere with the administration of antitoxin in the ways recommended the salt solution may be used as an adjuvant until we can learn something of its value.

The same may be said of Murphy's suggestion, the use of eucain and morphin in intraspinal injections, reported by him in THE JOURNAL, Aug. 13, 1904. In fact, it is perfectly possible to combine the various methods of treatment most generally used, and thus give the patient the benefit of their several possibilities, only care must always be taken not to disturb him too much.

2. Correspondence from Dr. W. H. Luckett.

3. Prophylaxis and Treatment of Fourth of July Tetanus, THE JOURNAL A. M. A., June 18, 1904, p. 1621.

TRAVEL NOTES.

VII.*

A WINTER SEMESTER.

LEWELLYS F. BARKER, M.D.
CHICAGO.

MUNICH, July 21, 1904.

For a certain period the globe-trotting method of travel may please and satisfy, but after a time it palls. When picture galleries have been seen by the dozen, palaces by the score, and churches by the hundred, the esthetic sense becomes over-saturated and refuses to take up more. The alimentary tract, too, rebels against the bustle of the railway station and the continuance of life in "grand hotels." The centers of benevolence gradually undergo cloudy swelling, hypertrophy with tendency to degeneration, through enforced over-activity in the matter of *la buonamano*. Desultory visiting of hospitals and physicians, easily stimulating for a time, meets with an ever-rising threshold as the weeks pass. The body craves a more regular life and the mind demands greater intensity and less diversity of occupation. It is, therefore, with a feeling of relief that, entering Germany from Italy, the physician finds in Munich a city eminently suited to a medical stay of months rather than of weeks or days; a city which, while offering unusual opportunity for the quiet enjoyment of life, also presents exceptional facilities for more concentrated medical work.

MUNICH.

The *Münchener*, celebrated for his *Gemüthlichkeit*, gives the visiting stranger a warm welcome, points with pride to his university, directs him to the Pinakotheks and Glyptothek, tells him of the theaters, of the opera and of the concerts in the Kaim-Saal, recommends his favorite brew of beer, and offers to meet him at the Café Luitpold, the Rathskeller, or the Künstlerhaus.

No better place could be chosen for an overworked nervous American to recuperate in. The air, as is well known to German neurologists, is especially beneficial to the neurasthenic, and the Bavarian motto *Der Mensch ist kein Eilwagen* is more easily lived up to in Munich than in most places.

In the southeastern part of the city, between the *Sendlinger Thor* and the *Thereseinwiese*, you find the general hospital, the various clinics, and the scientific institutes of the medical faculty. A strong group of men is at work there. The venerable Karl v. Voit is at the head of the physiologic laboratory, ably supported by Max Cremer and Otto Frank. Since v. Kupffer's death Johannes Rückert has been professor of anatomy, descriptive and topographic, and Siegfried Mollier is also professor of anatomy, histology and embryology. The distinguished Otto Bollinger is professor of general pathology and pathologic anatomy, with Hans Schmaus and Hermann Dürck as members of his staff. After Buchner's death Max Gruber (of the Gruber-Widal reaction) was called from Vienna

*The previous articles in this series have been as follows: "Travel as a Means of Post-Graduate Medical Education," by Dr. Nicholas Senn, July 23; "Is a Trip to Europe Worth Its Cost to the Medical Man?" by Dr. Lewellys F. Barker, July 30; "Spain and Ramon y Cajal," by Dr. Barker, Aug. 6; "Leprosy in the Hawaiian Islands," by Dr. Senn, Aug. 13; "Italy and the Great Antimalarial Campaign," by Dr. Barker, Aug. 20 and 27; "Father Damien, the Leper Hero," by Dr. Senn, Aug. 27.

to succeed him as professor of hygiene and bacteriology; Martin Hahn is extraordinary professor in the same laboratory, and Dr. Tromsdorff is assistant. R. Emmerich is also a professor of hygiene, and v. Tappeiner has pharmacology. On the clinical side Munich is fortunate in having as professor of internal medicine a man regarded by many with whom I have talked as the foremost clinician in Germany, namely, Friedrich Müller. Formerly von Ziemssen had had the medical clinic and von Bauer the propadeutic. When von Ziemssen died the chair of medicine and the medical clinic were divided between v. Bauer and Müller. Surgery is headed by von Angerer, a genial man, much beloved by his patients, a favorite in court circles and known as a good shot in the hunting field. v. Winckel is the gynecologist and Eversbusch the ophthalmologist. In psychiatry Munich has been lucky enough to secure the best man in the country in the person of Emil Kraepelin. When his new psychiatric institute, now building, is completed, the opportunities for the scientific study of psychiatry in Munich will probably be unparalleled. As my time in Munich was given over almost entirely to Friedrich Müller's clinic and the State Chemical Laboratory, I am better able to write of the work in internal medicine there than of the work in the other medical branches.

One drawback to the medical clinic in the Bavarian capital is the lack of a real university hospital. The internists are compelled to use the General City Hospital with all the hindrances to scientific work which such an arrangement entails. It is a great pity that a large city like Munich, with so able a faculty, has not its own university hospital, where selected cases could be studied and treated. But the university has formed a close alliance with the city hospital, and von Ziemssen was able to secure a special university building, built in juxtaposition to it, known as the Medical Clinical Institute, fitted with teaching laboratories, lecture amphitheaters and research rooms.

The amount of clinical material available for study and teaching is not great; it does not compare in amount or variety to the clinical material of Berlin, Vienna, London or Paris. It could, however, be increased, and doubtless through Friedrich Müller's influence will be. Moreover, it is just possible that the material is better worked up as it is than if it were accessible in greater quantity and diversity.

When Müller accepted the call to Munich a new arrangement was made. Instead of "Medical Clinic" and "Propadeutic Clinic," the Institute and work were divided into two equal and co-ordinate parts, the First and Second Medical Clinics. Each clinic is independent of the other. Students may attend either of the clinics or both, but must be examined by two or three professors—Müller, v. Bauer and May (the latter is at the Policlinic). Each half of the Institute has its own separate and distinct lecture room and laboratories, and each professor has his own wards in the General Hospital. The teaching laboratories are in one part of the clinical building while the laboratories for strictly scientific work are in another, more secluded part. There is a library of internal medicine used in common by the two clinics. In the teaching laboratories opportunity is afforded for instruction in clinical microscopy, clinical bacteriology and clinical chemistry. The more strictly research laboratories are excellently designed for investigation in chemistry, bacteriology, physiology and pathology. It is admirable to see the effort made to bring these sciences directly to bear on the clinical cases. While much can be done, as has been demonstrated in America, by a harmonious working together of the clinic on the one hand, with the laboratories of pathology, physiology, bacteriology and chemistry proper on the other, still scientific work must surely make more rapid progress when special laboratories for the direct application of the methods of these sciences, manned by skilled workmen, are installed in the clinic itself. Some excellent research is going on in the laboratories under Müller's direction, especially along the chemical lines in which he is so deeply interested.

Just here I may be permitted, perhaps, to digress in order to make a few general remarks concerning the difficulties which so far as I know confront would-be workers in clinical laboratories in all countries, difficulties which for the most part are due to the lack of proper laboratory organization. The clinical laboratory is everywhere, as yet, an unformed creature, a more or less chaotic appendage, subsidiary in interest and in regulation to the work of the wards. This is largely due to insufficient staff, insufficient funds, and, except in a few clinical laboratories, to insufficient interest in the clinical laboratory work on the part of the higher clinical men. Not until the clinical laboratory adopts the methods of organization so admirably worked out in the laboratories of pure chemistry can its work be expected to become very effective. In laboratory work it does not do to have the apparatus as common property. It should be possible in a clinical laboratory as in a chemical laboratory to secure reagents and glass when they are needed. There should be a storeroom under lock and key, in care of a storekeeper, open at regular hours, where stores can be drawn on by personal written requisition. There should be adequate janitor service. Each worker should have his independent working place, his own outfit, which he can lock up in his own cupboard, his specific routine, his particular problems. Where a certain amount of money is available, all this, with proper organization, can run as smoothly as clockwork. But without intelligent organization everything is agog. Everybody's property is nobody's. To secure a burette for yourself you must waste a co-worker's normal solution. The newcomer seeking a funnel holder for himself and finding one on your desk, runs the risk of spoiling some valuable quantitative estimation you are making. With the storeroom unlocked the phenylhydrazin is never in its place, the hardened filters disappear into one worker's locker, the glass beakers vanish, and graduated cylinders become a rarity. In the absence of a storekeeper and the requisition system, responsibility can seldom be fixed, the whereabouts of apparatus are enigmas, stores are exhausted and no new supply ordered, excess and waste go uncontrolled and experiments have to be conducted faultily, if at all. Research is ever discouraging enough without the aggravated evil of an unorganized laboratory.

If we are to hope for fruitful investigation in our clinical laboratories we must see to it that those who work in them have proper facilities and conveniences, that order and system prevail, that proper encouragement and adequate supervision are provided. I make this digression here because I believe that the Munich laboratory under Friedrich Müller's direction is likely to become one of the best organized clinical laboratories in Germany. Interested in laboratory work as Müller is, a highly productive laboratory worker himself, attracting ambitious young physicians from all lands to work with him, familiar with the methods and arrangements of German chemical laboratories, and endowed with unusual executive ability and organizing power, it would seem as though it were to the clinical laboratory in Munich that we might look if anywhere in the near future for a proper development and a systematic organization.

The routine work of the medical clinic in Munich, even with a relatively large staff of older and younger assistants, makes heavy demands on the time and energies of the director. From 9 to 10 each morning (Saturday included) there is the medical clinic in the amphitheater; from 10 to 11 a percussion and auscultation course is given by Müller himself; from 11 to 12 he holds examinations and is occupied with ward visits. Between 12 and 1 o'clock the research workers in the laboratories are visited and advised. Consultation hours are from 2 to 4 p. m., and the hours from 4 to 6 are devoted to clinical and laboratory work. The evening is given over to medical reading, medical writing and the preparation of the lecture for the clinic the next morning.

Friedrich Müller was a pupil of Gerhardt's, was for several years the assistant of that great physician, and is thoroughly imbued with the clinical investigative spirit of his former master. How much he reverenced Gerhardt is evident from the necrologic notice he wrote of him in 1902; how much he has been influenced by him can easily be discerned by visiting

his clinics and making his personal acquaintance. His 9 o'clock clinic is largely attended by the *Praktikanden* in Munich; the seats of the clinical amphitheater are all occupied and often a number of men are compelled to stand. And that this popularity is well deserved and does not depend on any catering to the lower motives, one can convince himself by regular attendance for a time. There is nothing of the *grosses Thier* to be detected. Müller's assistants attend the clinic to help him with experiments and demonstrations and to learn from what he says, but for no other reason. No effort is made to mollify or amuse students; earnest, exact, honest clinical work and carefully prepared lectures are the only inducements held out. Strict with himself, Müller is strict with his assistants, with nurses, and with students; the order, discipline and punctuality that result can scarcely fail to excite the sympathy and approval of the visiting onlooker.

As I have said, the clinical material in Munich is not so abundant as might be desired. There are no free beds in the American sense; many of the patients are paid for by the societies for invalid insurance. The German arrangement known as the *Kranken casse* sends to private physicians great numbers of patients who should be hospital patients. Besides, the medical profession as a whole in Munich has not yet learned to co-operate with the university clinic. Later, when practicing physicians feel more keenly than they do at present their duties toward the medical education of the coming generation of physicians, they will, when they in their private practice meet with particularly interesting cases which are suitable for demonstration, bring them to the director of the clinic for presentation to his class. Individual physicians of the better sort have already made a beginning in this direction, and as soon as the Munich doctors realize how fairly they are treated under such circumstances and how helpful they can be in this way, the practice will doubtless grow.

Müller's clinical lectures are models of clearness, terseness and force. It is not always easy for the clinician, whose audience consists of clinical beginners on the one hand and more advanced students and postgraduate workers on the other, to so plan his address and the presentation of his case that all his hearers shall be interested and instructed. Two or three students are always called to the side of the patient; the Socratic method of teaching is often resorted to, though not to the exclusion of the clinical lecture proper. I was astonished at the simplicity of Müller's talks, and it occurred to me that perhaps in America we sometimes assume that our students know more than they do, that we sometimes overestimate their preparedness and assimilative power and in consequence fire over their heads. Müller makes relatively few references to the bibliography of his subject, uses plain language, avoids unusual technical expressions, assumes a fair knowledge of anatomy, physiology and physiologic chemistry, but does not presuppose extensive clinical knowledge or experience (beginners in clinical work can not possibly have them). The student is led from the anatomic and physiologic knowledge he has, through the anamnesis and the exact observation and examination of the patient, gradually up to the point where the diagnosis "makes itself." As a teacher the Munich professor has learned that very important lesson of beginning at the beginning; he does not, for example, inaugurate the clinical study of tabes with a minute description of pathologic changes in the spinal ganglion cell. It is the "complaint" of the patient that is first listened to and this forms, as it should always do, the starting point and, to a certain extent, determines the course of the whole clinical investigation. The complaint of the patient, it may be urged, is sometimes very misleading, true, but harm never results from taking it as the commencement of the clinical study, provided the patient is subsequently questioned in all directions and the whole body is examined thoroughly by all the methods at the clinician's disposal. The beginner learns from observation in the clinic the great significance of the anamnesis in some cases and in others the fallacies to which it may lead. Above all, he comes to realize the importance in every case, no matter what the anamnesis, of the thorough objective examination extended to all the organs and regions of the body.

Müller demonstrates as much as possible, even when it is necessary to cut the clinical lecture short to do so; attention is called to the visible symptoms; the recognition of the physical signs is compelled. The chemical tests of urine, feces and sputum are made at the time (not simply reported to the class). The bacteriologic and cytologic slides are under microscopes at the table where all may examine them. When antitoxin is administered the serum is shown; when oxygen gas is advised in treatment the oxygen balloon is exhibited and its method of use illustrated. I have even seen an ordinary hypodermic syringe passed around the class! Illuminated *x*-ray photographs are shown; blood pressure readings are made; gross specimens from the autopsies are presented; microscopic sections from diseased organs are projected on the screen. In short, the method of object teaching or the principle of *Anschaulichkeit* is followed *ad maximum*.

(To be continued.)

Clinical Report.

A CASE OF TETANUS TREATED SUCCESSFULLY WITH ANTITETANIC SERUM.

T. G. ODELL, M.D.,
AND
C. C. SNYDER, M.D.
SALT LAKE CITY.

Patient.—S. B., aged 17; occupation, porter in wine cellar. Family history negative. He was admitted to the Holy Cross Hospital July 22, 1904, suffering from a well-defined case of tetanus. The following history was obtained after the patient had recovered sufficiently to talk:

History.—On July 4, while setting off a fire-cracker, the palm of the left hand was injured. This did not cause much trouble until July 11, when he complained of some pain and stiffness in the muscles of the neck and back. These symptoms were not severe, but had increased somewhat by July 15, when a physician was called and diagnosed the case as "muscular rheumatism," and ordered antirheumatic treatment, which was continued until July 22. The patient was confined to bed.

Examination.—At this time our attention was called to the case, and on examination we found the following symptoms present: Risus sardonicus very marked, tonic spasms every two minutes, opisthotonos exaggerated by the slightest noise or excitement; jaw locked to the extent that it would not admit a lead pencil between the teeth; temperature 104 F., pulse 120; constipation; no difficulty in swallowing and no pain.

Treatment and Result.—Patient was sent to the hospital when we had finished the examination, and at 8 p. m. 20 c.c. of anti-tetanic serum were administered subcutaneously. This dose was repeated at 12 o'clock midnight, and a similar dose given every eight hours until 220 c.c. had been used. He was also given morphin sulphate, gr. ¼, and atropin sulphate, gr. 1/100, hypodermically.

No improvement was noticed for 36 hours, when the jaws relaxed sufficiently to admit an ordinary lead pencil between the teeth. There was a very slight improvement in the spasms; temperature 102, pulse 110. At this time chloral hydrate in 15-gr. doses was given by mouth every four hours.

July 25 there was decided improvement; the jaws relaxed three-quarters of an inch; chloral and serum were discontinued and sodium bromid in 15-gr. doses was given every four hours; temperature 99, pulse 100.

July 26, jaws relaxed one inch; patient was able to chew; continued to improve, and was discharged from the hospital cured Aug. 4, 1904.

This is the first reported case of tetanus that has recovered in this section of the country.

THE JOURNAL OF THE AMERICAN MEDICAL ASSOCIATION

103 DEARBORN AVENUE . . . . CHICAGO, ILL.

Cable Address . . . "Medic, Chicago"

Subscription price . . . . . Five dollars per annum in advance

SATURDAY, SEPTEMBER 3, 1904.

THE YEAR'S SUCCESS IN TETANUS PROPHYLAXIS.

Beginning with the Iroquois Theater catastrophe, just at the close of last year, a series of life-destroying disasters has followed with what seems to be unparalleled frequence and immensity. The fire on the *General Slocum*, in East River, preceded but a short time the sinking of a steamer ladened with Scandinavian emigrants bound for this country. Railroad wreck has followed railroad wreck, culminating in the Colorado disaster, which caused a loss of life almost unequaled in the history of railroad accidents. In the face of these horrors, many of which were the plain result of negligence on the part of public or private officials, there is some relief to be found in the analysis of the annual tetanus epidemic, by which form of child-sacrifice we make our annual blood-offering to commemorate the independence of these our United States. Last year we were able to collect 415 reports of convulsion-racked victims of the toy pistol and its allies; this year we rejoice at a list of only 105. And being a rare chance, we hasten to credit at least a part of these 300 saved lives to the efforts of public officers, to credit up on the side of the sheet opposite to the debit column of the Iroquois and the *Slocum*.

In the analysis of the conditions existing during the epidemic of this year, the facts that develop seem to indicate that the improvement of this year, as compared with last year, is not due to natural causes, such as decreased abundance and virulence of the bacilli, but to a number of factors all produced by humane effort. This is fortunate, for it holds forth hope that by a continuance of this effort the ground gained may be held, and still more improvement made in the future. Tetanus was less frequent this year for two reasons: First, less injuries were produced on the Fourth than usual; second, the injuries that were received were better cared for. Both of these conditions were the outcome solely of a better understanding by public and profession of the really tremendous danger that lies in a Fourth of July wound, and for this understanding credit must be given to the press, both lay and medical. When, a year ago, THE JOURNAL began the collection of statistics on this subject, it was with little appreciation of the real enormity of the casualty list. We were as much surprised at the huge totals—466 deaths and 3,983 injured—as were nearly all who read them, for no complete collection of these injuries and deaths had ever before been made. The labor and expense involved in this work has been most abundantly repaid, for the effect produced far exceeded anything we had hoped for. A definite basis of facts and figures was given for the many public-spirited citizens, physicians, municipal officers and editors who for years have been making earnest efforts to check an annual calamity which they appreciated more than did their hearers; and these facts and figures were so gruesome that none could fail to be impressed. As pointed out in our article, the fruit of this was a universal publicity given by every paper in those portions of the country where Fourth of July is celebrated by explosives, which resulted in the passage and enforcement of laws aimed at the use of dangerous means of celebration, in the abandonment of "home treatment" of these wounds for care by physicians, and on the part of the physicians in a more thorough prophylactic treatment of Fourth of July injuries.

The lesson and the danger of the future is clear. It remains to be seen if the falling off in mortality will result in a falling off in precautions, as so often follows all movements depending on a public action. As the gain has been made largely through the agency of the daily press, so it must be maintained by the same means, and medical men can do much to aid in this. If before the coming Fourth local societies will pass resolutions calling attention to the need of enforcement of the laws bearing on the use of explosives, and the dangers of Fourth of July wounds as a source of tetanus, the papers will readily sound the alarm. Much can be done in the way of aiding newspapers in preparation of articles on this subject by furnishing statistics and information from proper medical sources. We have noted much good from just these measures during the past year. Every effort must be made to see that the agitation of this year is repeated next June, or we may lose what has been gained, for the blank cartridge and the cannon cracker will be put on the market ready for sale wherever the police will permit.

Another lesson of this year's epidemic is furnished in the results of prophylactic treatment and curative treatment. The latter is, in the case of Fourth of July wounds, almost unavailing, as shown by a mortality of over 95 per cent. Prophylactic treatment, on the other hand, is proven by repeated experience to be absolutely successful. We have yet to learn of a boy whose blank-cartridge wound was thoroughly cleaned out under anesthesia and followed by an injection of antitoxin, who developed tetanus or suffered from the vigor of the treatment. As proper treatment is so perfectly efficient in preventing lockjaw, in the case of the boys who do die of lockjaw after the Fourth, the question may be raised most properly, "Who is to blame?" For it is certain that there has been neglect somewhere. We can only say that in the future we hope the neglect will always be found to have been on the part of the patient.

May not the Association itself do something in this matter? Beside helping to secure publicity through its consideration of Fourth of July injuries and their re-

sults, may it not start proper legislation aimed at the root of the evil—the manufacture and sale of dangerous explosives which are useless except for the celebration of the Fourth? Not until this is done will the situation be safe, and the initiation of such action would very properly begin with the American Medical Association.

DIABETIC NEURITIS.

The nervous system is peculiarly susceptible to the action of various chemical agents, whether introduced from without or generated within the body as a result of metabolic or infective processes. That in some instances the central, and in other instances the peripheral division, and in still other instances both divisions of the nervous system, should suffer under such circumstances, must be due to differences in chemical affinity beyond present means of determination No doubt, isolated symptoms of neuritis have for a long time been observed in cases of diabetes, but it is, of course, only since knowledge on the subject of the former has become well defined that an understanding of the connection between the two has been possible.

The clinical phenomena to which peripheral neuritis gives rise are at times so much like those of locomotor ataxia that it is not surprising that the symptoms were for a long time attributed to disease of the spinal cord; and in this connection the question may be fairly asked whether there is not after all some relation pathologically between the gray matter of the anterior horns of the spinal cord on the one hand, and the sensory nerves and the posterior columns of the cord on the other hand.

In a recent communication, Dr. F. W. Pavy,[1] who has devoted much attention to the study of diabetes, and who was one of the first to describe the symptoms of neuritis as a complication of that disorder, discusses some of the varied phenomena of diabetic neuritis. He points out that cramp may occur in the absence of signs of neuritis, being especially marked when the amount of sugar in the urine is large, and he attributes the phenomenon to the direct effect of the sugar passing through the system on the muscular substance. The characteristic symptom of diabetic neuritis is a want of muscular co-ordination, without actual paresis. The ataxia is, as a rule, not so marked as under other conditions. At first the gait is unsteady and insecure, and somewhat like that of an intoxicated person, while later the patient may be unable to get along without the aid of a stick or the arm of a friend. The ataxic diabetic patient can maintain his equilibrium when standing with his feet together and his eyes shut much better than the tabetic. The ataxia may be unattended with sensory phenomena, while conversely these may be marked when the ataxia is slight.

Fibrillary contractions unattended with any sensation are sometimes visible over some muscles. They appear as wavy oscillations or twitchings beneath the skin. Hyperesthesia localized to different parts is frequently present At other times there may be numbness, tingling, a sensation of pins and needles, and other paresthesiæ. Sometimes the soles of the feet are tender, so that walking is painful, or the patient may not feel the ground properly, or he may seem to be walking on pebbles or on pointed projections. Aching, deep-seated pains in the extremities, sometimes conjoined with lightning-pains, may be present, and often there is complaint of tenderness of the flesh and bones. The pain is usually worse at night than by day, and the patient may find difficulty in placing the legs in a sufficiently comfortable position to permit of sleep. Occasionally girdle-pain is observed. The knee-jerks are often abolished in cases of long standing, although they may later be restored, with reduction in the amount of sugar in the urine. Should the vasomotor nerves be involved, there may be local flushings and pallor of an abnormal nature, and the hands or feet may become hot and florid or blanched and cold. Trophic disorders also may result. For example, gangrene of the toes or perforating ulcer of the foot, cataract, loosening of the teeth, xanthoma, boils, carbuncles.

Diabetic neuritis is most commonly symmetrical in distribution, and the upper extremities are more frequently involved than the lower. All four extremities may, however, be affected together, or exceptionally the upper alone. Involvement of the right lower extremity, the right side of the body and the right upper extremity has been observed. Sometimes the disturbance is confined to a single nerve, such as the sciatic or the brachial. In some cases symptoms of angina pectoris have been noted, but these have yielded to treatment of the diabetes. Involvement of the third nerve, with ptosis and external strabismus, has been reported.

In the opinion of Dr Pavy, the development of the neuritis complicating diabetes is attributable to the presence of sugar in the blood, and the treatment consists in measures directed to a reduction of the amount of sugar, especially careful dieting. In addition potassium iodid five grains, with ammonium bromid ten grains, has been administered thrice daily with benefit. Should these fail to bring about the desired result the continuous galvanic current may be employed, and when there is severe superficial pain a liniment containing aconite may be applied with advantage.

A NEW FORM OF THROAT INFECTION DUE TO AN ORGANISM OF THE OIDIUM GROUP.

The amount of bacteriologic work which has been done in the last few years on the various forms of angina is so great that one would expect that our knowledge of the different forms of throat infection would be fairly complete. Nevertheless, new varieties of throat infection have been described, notably the form due to

1. Lancet, July 2, 9, 1904.

the spirillum and fusiform bacillus of Vincent, and the occasional cases of tetragenus angina. That angina could be due to the group of organisms which cause ordinary thrush has hardly been suspected, though any bacteriologist who has worked with throat cultures can not have failed to note the relatively frequent occurrence of oidia, and the French observers have reported a few cases in which this group of organisms played the part of secondary invaders.

In a recent article, Oliver[1] has described a new form of throat infection, presenting characteristic clinical and bacteriologic findings, due to an infection with an organism of the oidium group. On the clinical side the disease presents a variety of pictures as it varies both in its course and in its severity. In children under twelve the disease usually assumes an acute form, while in adults the course is generally chronic, one of Oliver's cases having lasted for fourteen years. The symptoms first noted are those generally accompanying an acute infection, coryza, pain about the eyes, and aching of the back and limbs. These symptoms are accompanied with evidences of the local infection in the form of dry, paroxysmal cough and difficulty and pain in swallowing. The first objective signs are an intense hyperemia of the tonsils, uvula, and pharyngeal wall, followed by great swelling of the tonsils and uvula; the cervical glands become enlarged and tender, and a thin, grayish-white, slime-like membrane appears on the tonsils. The temperature may remain normal or rise as high as 102 or 103 F. Subsequently a V-shaped membrane forms on the posterior pharyngeal wall, and this with the membrane over the tonsils becomes thickened, adherent, elevated, and of a pearl-gray color. About this time gray, elevated, hard, adherent patches appear on the tongue, usually near the center, but occasionally all over. These are of pinhead size, but gradually increase until they may reach the size of a silver quarter. The patches are irregular, elevated, firm, furry to the touch, and can only be removed with difficulty and pain. The disease having reached its acme now tends toward healing, the membrane disappears, the glands in the neck go down, and the general condition improves. In most instances, however, the tonsils and particularly the tongue are marked by ulcerations. In the tonsils these are generally situated at the top of the gland in the sulci, and are deep and punched-out in appearance. On the tongue the ulcers are irregular and quite deep, reaching into the submucosa. It is these ulcerations of the tongue which may remain for months and which characterize the chronic cases.

The bacteriologic examination of these cases shows the presence in cover-slips of numerous round or ovoid bodies from 6 to 8 micromillimeters in diameter, with double contour, and staining lightly except for a single chromatin granule at the thicker end. Attached to the oval body at the thicker end is a thread of varying length, which may or may not be jointed. The organism stains by Gram's method and all the basic anilin dyes. It is grown with difficulty at first, but when once obtained in pure culture can easily be reinoculated. It is pathogenic to rabbits, and in these animals the clinical picture of the disease can be reproduced quite closely. Of singular interest is the fact that a physician who worked at the laboratory bench where Oliver had autopsied his rabbits contracted the disease. While this form of throat infection has so far been described only in San Francisco, there is no reason to believe that it is limited to that locality, and it seems probable that like other new diseases as it is more carefully looked for it will be found to be more widely distributed.

1. California State Journal of Medicine, vol. II, No. 8.

BACKWARD CHILDREN AND EDUCATIONAL TECHNIC.

An interesting experiment in educational methods which is attracting wide attention, is deserving of the special consideration of physicians. Very few are now persuaded that all men are born equal in the sense that intellectual qualities have been doled out with unfailing regularity. What certain pupils are able to accomplish with comparative ease, others of the same age and of the same social stratum may find very difficult. For these latter pupils attendance at school becomes a depressing routine, a constant source of worry and nervous unrest, and prone to be rendered still more unpleasant by intellectual tension out of school hours and the discouragement of the feeling of incapacity. How much of harm the attempt to cast all the pupils of each class in one mold has done, only those can realize who have seen delicate children run down every year under the strain of their school work.

The superintendent of the schools of Batavia, N. Y., found this problem of the weaker and slower pupils being compelled to compete with the physically stronger and intellectually more rapid workers crowding on him for solution. As described in a recent number of the New York *Independent*, there came to him an inspiration. "Let us," said he to the governing board, "put an end to this killing of children." His method was simple and rational enough. He suggested an extra teacher for every room, whose duty would be not to hear lessons, but to help those pupils who were falling behind in the class. Needless to say, this sort of help requires special tact and broad sympathy with children's minds, as well as a clear idea of the way in which pupils view things so as to recognize the source of their difficulties. The experiment was tried first in a single room, but the result was so strikingly beneficial, both as regards the pupils themselves and the feelings of satisfaction on the part of the teachers, that what has since come to be called the "Batavian experiment" is now finding its way into many of the higher schools.

The most interesting feature of this experiment is that on the health of the children. While there was no doubt from the very beginning that it would be of service for the general scholarship of the schools, the hy-

gienic feature was not expected to be quite so prominent.

One mother, rejoicing over her boy restored to health and intellectual vigor, after she had seen him depressed and discouraged during the preceding year, declared the new experiment to be "a new phase of Christianity." It is especially satisfying to find that the success of the experiment has been pleasing to the powers that be in the school. The president of the school board says: "The method of meeting our problem is not only a revelation, it is a revolution."

There are many, physicians especially, who feel that too much is demanded of children in school at the present time. There are many who are sure that the game is not worth the candle, since so many of the modern fads in education bear little relation to the real mental development or to success in life. It would indeed be a consolation to find some way out of the anxious problem which physicians have had to meet in this matter of the education of more delicate children. The fact that as many as six times the number of pupils remain to graduate at the high school in Batavia is apt to prove a better argument, however, for educators than any physical improvement may with the new system. Let us hope that it will receive the recognition that it apparently deserves. In any case it must be remembered that a child's health is much more important for its success in after life than any amount of education, however apparently successful our wonderful methods of educational development may be presumed to be.

THE DEPARTURE OF DR. OSLER.

While long expected, the announcement[1] of the intended departure of Dr. William Osler to assume the regius professorship of medicine in Oxford University, conveys a sense of loss to the entire medical profession of the Western Hemisphere. The change from the Johns Hopkins University, where he has been the shining light for so many years, to the famous old English university, is a change that does not alter Dr. Osler's standing among the scientists of the world, because of the fact that he is almost as well known across the water as he is on this side. By birth and education he was a Canadian, and in Canada was the commencement of his fame as a teacher and practitioner. He came to the United States in 1884 to the University of Pennsylvania, and in 1889 he went to Johns Hopkins University, and has since been actively engaged in the affairs of that institution, for the past few years being its guiding spirit. His extraordinary capacity for hard work, his keen insight into affairs, his marked success as a teacher of medical students, and his wonderful sympathy as a man among men, have centered about him a press of varied duties such as few men could successfully manage and fewer still carry for so long.

As a teacher, he has been most emphatic in upholding the principle that the art of medicine should be based on the most exact scientific knowledge obtainable. In following out this principle in his own practice, his thoroughness has won for him the position which he holds—one of the foremost men in medicine to-day. In every one of his varied duties he has been faithful.

While typically representing the highest ideals in scientific medicine, he found time and inclination to lend a helping hand in all work that tended to uplift his profession. He is an enthusiastic worker in the movement for the organization of the profession, and, burdened as he is by his other work, he does not hesitate to accept the position and perform the duties as councilor in his state when the new plan of organization was adopted by the Maryland Society. In this he has set an example for those who feel that they are too much occupied with scientific work to meet on the common level and assist in the movement for the improvement of the profession. This illustration of his devotion to the interests of his confrères shows that his actions were consistent with his high ideals as to the physician's duty.

As one of the profession of Maryland, his loss will be especially felt. His influence and example, his active participation in its activities, and his generous contributions to all its enterprises, have promoted immensely its morale. His leadership has been felt and acknowledged by all. Few men so well combine the qualities of leadership, tact, unselfishness, active interest in everything professional, and ability so conspicuous as to be recognized by all without jealousy.

For some years Dr. Osler has tried to arrange his work so as to avoid some of the tremendous pressure under which he labors. His teaching, his hospital work, his constantly increasing consulting practice, his participation in other professional affairs of local and national importance, have left him little time for his literary work. The Oxford position is more of an academic one, involving less time-taking routine, and will, therefore, leave him free for the literary work which he is anxious to accomplish. He undoubtedly hopes to utilize the immense amount of valuable clinical material which he has accumulated. The ideal life in Oxford University is just suited to such work. We congratulate both Dr. Osler and Oxford University, especially the latter.

THE DOCTOR IN POLITICS.

Every one should take an interest in politics, because it is one's duty as a citizen. But every physician should be interested much more than the ordinary citizen, for his relations to the state are more important. The people depend on him to suggest measures and methods for the sanitary and health legislation and for the care of the physically weak. Evidently this view is held by a sufficient number of physicians in Texas to influence one of the parties, and to make it believe that it

1. THE JOURNAL, news columns, Aug. 20, 1904.

is to its interest to side with the profession The fourth plank in the Texas Republican platform is as follows:

We believe that the home for the old soldiers, that the asylums for the orphans, that our penitentiaries should be presided over by competent, honest and faithful servants; that our eleemosynary institutions should be sanitary, and the insane removed from our jails to proper quarters. In trials for insanity there should be neither acquittal nor conviction without the interposition of a medical board.

Would that the profession were influential enough to have such a plank in the platform of both parties in every state in the Union!

AMPUTATION STUMPS AND SATISFACTORY PROTHESIS.

There is probably no class of surgical patients to whom the details of treatment have greater subsequent import than those requiring amputation of lower extremities, because the application of a satisfactory artificial leg depends directly on the character of the stump. As this can be so greatly influenced by the operative and the almost equally important after-treatment, it should be an obligation for every surgeon to be exactly informed of the best methods. F. T. Murphy,[1] in a very thorough study of this subject, from the viewpoints of the patient, the prothesist and the surgeon, has, by demonstrating the fallacies of many accepted procedures, and clearly indicating the surest means to the best functional results, forcibly emphasized the essentials of treatment, which, if closely followed, will reduce to a minimum the distress of an enormous number of unfortunates

ERYTHEMA CONTAGIOSUM.

Under the name of erythema contagiosum, Escherich[2] has recently described cases of a disease which, in many ways, resemble the eruptive fevers of childhood The name was first given to the disease by Stricker of Giessen, but Escherich states that he has observed it for a good many years, first at Graz, and later at Vienna. It would appear that the disease was at first confounded with German measles. The disease has an incubation period of from six to fourteen days, and appears in children, who are subjectively well, in the form of an intense redness and turgescence of the cheeks, which is often quite sharply limited by the nasolabial line, thus resembling erysipelas. Less frequently the eruption on the face is in the form of flecks or gyrate patches. In most cases there are also present on the forehead, the region of the ears, and on the extremities, scattered patches of bluish-red erythema which sometimes coalesce. The eruption lasts from six to eight days, and then gradually fades, first on the face, then on the extremities. There is no desquamation, and unpleasant sequelæ are not observed. From time to time there have been described in this country epidemics of atypical eruptive fevers, usually considered to be atypical German measles. It seems likely that the disease which Escherich describes may exist in this country, and it behooves the general practitioner, who is most likely to meet with such cases, to be on the lookout for it

1. Boston Med. and Surg. Jour., July 14, 1904.
2. Münchener med. Wochenschrift, No. 24, 1904.

UNPRECEDENTED MEDICAL ASPECTS OF THE WAR NOW IN PROGRESS.

Warfare has lost its personal character, and is now merely wholesale butchery. This fact is impressively demonstrated by a letter from Dr. Paul Jacoby[1] of Orel, Russia, whose experience at the seat of war has shown that the battles and mine explosions affect men like great cosmic phenomena, in which the personal element is entirely lacking. Danger, death itself, present themselves under new and strange forms, altogether different from the ideas of war to which we have been accustomed since the days when knighthood was in flower. Our psychology has not adapted itself yet to the new aspect of warfare. A cruiser which in less than two minutes sinks with 800 men on board; a skirmish in which 104 out of 107 of the horses are killed; an assault in which every assailant drops to the very last man; an assault over a surface known to be undermined by fifteen hundred mines; these things affect one like a tremendous earthquake or volcanic eruption. Every physician knows that catastrophes of this kind breed psychoses, and the nervous condition of those who escaped from such catastrophes as the blowing up of the *Variag*, the *Petropavlovsk* and the *Hatsuse*, is similar to that of the survivors of some great cosmic upheaval. Nervous disturbances and psycho-physical troubles should be treated at once, and on the spot, in conditions of absolute repose. Some of the survivors of the battles and explosions at the seat of war were hurried away from the spot and sent home, the interminable railroad journey rendering their curable psychosis probably incurable insanity. Jacoby has urged on the Russian Red Cross, and his suggestions have recently been put in practice, that certain barracks and tents should be set apart for such patients, to isolate them and render possible the restoration of their nervous balance. The conditions of warfare all predispose to psychoses, under the most favorable surroundings, and the new forms of death—forms to which the mind is not accustomed—and the psychologic conditions which they create, must certainly have an influence on the psycho-physical condition and on the pathogenesis of nervous morbidity among troops in active warfare. They may, perhaps, originate new morbid forms akin to the traumatic and hysteric neuroses of industrial origin. In the campaign in Manchuria all these causes are co-operating with an unprecedented intensity, and the physicians at the seat of war have been so preoccupied with their surgical duties that these victims of the war have been neglected or sent home, thirty or forty days of railroad traveling being superadded to the other factors of their psychosis. Jacoby refers the brutal acts and perversions of men in camp life to unrecognized psychoses generated by their environment. The authorities and public opinion, however, are not always able to distinguish between a psychosis and a crime. He refers to the recent suicide of General MacDonald as an instance in point. The two armies now fighting in Manchuria have the sad privilege of inaugurating these new psychologic and psychopathic conditions of modern warfare with its character of industrial butchery

1. Progrès Médical, xxx, No. 33, Aug. 13, 1904.

by perfected processes. No country in the world is prepared to face the exigencies of modern warfare perfectly, but fortunately the psychopathic victims of civilized war can be readily treated anywhere, even on the very battle-field. Jacoby refers to his own experience at the Orel Asylum, where every year the summer months are spent by the inmates in temporary wooden shelters or tents while the buildings are being renovated. The organization of a psychiatric department in the Red Cross service for troops during a campaign is a pressing necessity. It is particularly needed when the campaign is remote from the centers of civilization, and, above all, in the tropics.

Medical News.

ARKANSAS.

Physician Pleading Self-Defense is Acquitted.—Dr. William L. Parchman, Van Buren, charged with killing Charles Tolson, was found not guilty. His plea was that Tolson made a movement as though he were about to draw a revolver.

Unlicensed Itinerant Fined.—An advertising itinerant specialist, who attempted to ply his trade in Newport, was fined $25 and costs for failure to secure a county license. The proceedings were instituted by the Jackson County Medical Society.

State Board Reorganizes.—On July 12 the State Board of Medical Examiners met at Little Rock, and reorganized, electing Dr. Adam Guthrie, Prescott, president. Dr. Ben L. Harrison, Jonesboro, was appointed a member of the board, vice Dr. Charles R. Shinault, Little Rock, removed from first congressional district.

State Society Election.—At the annual meeting of the Arkansas Medical Society the following officers were elected: Dr. Joseph P. Runyan, president; Drs. John L. Butler, Sheridan, Herbert H. Canfield, Siloam Springs, and Adolphus G. Clyne, Bethel, vice-presidents; Dr. Richard C. Thompson, Pine Bluff, treasurer, and Dr. Charles C. Stephenson, Little Rock, secretary. Little Rock was selected as the meeting-place for 1905.

Negro Medical Society.—At the session of the Negro State Medical Association at Little Rock, Dr. Hayward W. Suggs, Little Rock, was elected president; Dr. Claude M. Wade, Hot Springs, vice-president; Dr. Meaddoughs, Little Rock, secretary, and Dr. George A. Flippin, Pine Bluff, treasurer. The association adopted resolutions that the colored race should have representatives on the State Board of Medical Examiners and State Board of Health.

Lightle Not Dead.—Dr. Richard G. Lightle, Searcy, an account of whose tragic death by fire appeared in THE JOURNAL of June 4, and whose widow received $21,000 life insurance, has been found alive in Georgia, and is to be extradited, and returned to Arkansas to be tried on the charge of attempting to defraud insurance companies. Mrs. Lightle, on being convinced that her husband was not dead, voluntarily returned the life insurance money to the five companies interested.

CALIFORNIA.

Cornerstone Laid.—The cornerstone of the new College of Physicians and Surgeons of Los Angeles was laid with formal ceremonies August 13.

New Medical Ward.—Through the munificence of a citizen of Pasadena, a medical ward has been provided for the Pasadena Hospital, which will cost about $15,000. The gift was conditional on the preservation of the incognito of the donor.

Becomes a Part of University.—At a meeting of the Board of Regents of the University of California in San Francisco, August 9, the intermediary department of medicine was taken over by the regents and will be reorganized into a regular department.

Accident.—Dr. Mary B. Ritter, Berkeley, suffered fracture of the clavicle and two ribs in a runaway accident near New Almaden, and has intimated her intention of resigning the lectureship of hygiene in the University of California, on account of her injuries.

Welch Delivers Lane Lectures.—Dr. William H. Welch of Johns Hopkins University delivered the Lane course of ten lectures on "Infection and Immunity" before the faculty and students of Cooper Medical College and invited guests, in the five days beginning August 15.

College to Have Library.—Cooper Medical College, San Francisco, is now ready to erect the medical library building provided for in the will of Mrs. Pauline C. Lane, and the authorities of the college have petitioned the Superior Court for permission to sell the property bequeathed by her for this purpose.

Dismissed and Convicted.—The charges of practicing medicine without procuring a state license preferred by the State Board of Medical Examiners against Drs. James Gerow, L. A. Cloutier and G. W. Winckfield of Oakland County, were dismissed, August 24, for lack of sufficient evidence to convict.——"Dr." W. J. Sylvester, San Francisco, convicted of practicing medicine without a license, was fined $100.

ILLINOIS.

The anti-expectoration ordinance, which became effective in Joliet, August 15, prohibits spitting on sidewalks and in public places.

Leprosy at Peru.—A case of leprosy has been discovered in Peru. The patient is a furnaceman at the works of the Illinois Zinc Company, is married, and has seven children. The origin of the disease was not discovered.

Smallpox.—Belleville has 9 houses quarantined and 3 patients at the County Isolation Hospital.——East St. Louis, is reported to have 300 to 400 cases; 35 of the 38 patients at the isolation hospitals are from East St. Louis.——Smallpox exists in a number of houses near the Illinois Central Station in Centralia, and the railway company has asked the State Board of Health to enforce quarantine.——Peru has 15 cases and La Salle one case.

Chicago.

Personal.—Dr. Alfred Schalek, after a long illness, has recovered and resumed practice.——Dr. Thomas J. Jackson sailed for Europe, September 1.——Dr. Vida A. Latham was recently elected secretary of the American Microscopical Society.——Dr. and Mrs. Jacob Frank sailed from Hamburg for New York, August 28.

Health Department Rejoices.—The Bulletin of the Health Department for the week ended August 27 is a song of rejoicing because the August death rate is phenomenally low; because the low mortality among infants and children continues, and because of the reduction in the cases of typhoid fever and acute intestinal diseases.

Mortality of the Week.—The total deaths last week numbered 472, equivalent to an annual death rate of 12.76 per 1,000 or more than 16 per cent. below that of the corresponding week of 1903. Acute intestinal diseases caused 102 deaths; consumption, 52; violence, 46; heart diseases, 39; pneumonia, 32, and Bright's disease 26.

MARYLAND.

Urges Vaccination.—The State Board of Health is sending letters to the boards of school commissioners urging thorough vaccination of all school children before the term begins.

Personal.—Dr. Charles G. W. Macgill, Catonsville, is visiting Richmond, Va.——Dr. J. R. Cullen, Catonsville, is visiting Camden, Del.——Dr. Charles Owens, Sunnybrook, has gone to Port Norris, N. J., to practice.——Dr. Albert J. Bossyns, of Mt. Washington, has gone to the Pacific Coast, via St. Louis.

Baltimore.

Personal.—Dr. Philip E. Craig is seriously ill with typhoid fever.

May Succeed Osler.—The general belief in the profession in Baltimore is that Dr. W. S. Thayer will succeed Dr. William Osler, at the Johns Hopkins Medical School.

Sings for Charity.—Dr. B. Merrill Hopkinson has sent $59.35 for the Children's Fresh Air Fund, the net proceeds of a song recital given by him at Prout's Neck, Maine, where he is spending the summer.

Seeks Mandamus.—Dr. Campbell F. Flautt has petitioned the Court of Common Pleas for a writ of mandamus compelling the Board of Medical Examiners of Maryland to issue him a permit to be registered as a physician. An order was granted by the court, returnable September 10. Dr. Flautt claims to have been a practitioner prior to Jan. 1, 1898, the date of the law, and to be a regular graduate.

MICHIGAN.

Smallpox.—It is reported that smallpox is prevalent in and around East Nelson and Pierson.

Personal.—Dr. William E. Parker, Dowagiac is seriously ill with septicemia, due to an operation wound.——Dr. Myrtle E. Lockwood, Battle Creek, has returned from Japan.——Dr. Raymond D. Sleight, Ann Arbor, assisant in ophthalmology and otology in the University of Michigan, has resigned, and will practice in Battle Creek.

Post-Graduate Instruction in Detroit.—The Detroit Post-Graduate School of Medicine has been incorporated with a capital stock of $5,000, by Drs. Walter R. Parker, Frederick W. Robbins, Charles G. Jennings, David Inglis, Burt R. Shurly, Charles D. Aaron, Frank B. Walker, Andrew P. Biddle, Preston M. Hickey, and Benjamin R. Schenck. The first session opened in the Detroit Clinical Laboratory building, September 1.

Itinerant Wins First Suit.—In the case of Max Jay Kraus, charged with practicing medicine in Michigan without being registered in the state, the jury returned a verdict of not guilty. The defendant is one of an itinerant medicine company known as the "Hot Springs Doctors," which has been taking $300 or more a day from the ignorant of Traverse City, and the prosecution was at the instance of the local medical association.

July Mortality of Michigan.—The total number of deaths for July was 2,510, or 65 more than the number for June, and 143 less than the number recorded for July, 1903. There were 520 deaths, or 20.7 per cent., of infants under 1 year; 143 deaths of children, aged 1 to 4 years, and 720 deaths of persons aged 65 years and over. Important causes of death were as follows: Influenza, 4; measles, 8; scarlet fever and whooping cough, 10 each; puerperal septicemia, 19; diphtheria, 24; typhoid fever, 28; meningitis, 36; pneumonia, 69; cancer, 156; diarrhea, enteritis, under 2 years, 206; tuberculosis, 211, and accidents and violence, 226. There were only 5 deaths reported from tetanus, a number much smaller than that for the corresponding month of 1903. No cause for tetanus was assigned, except in one instance, when a toy pistol was stated to have inflicted the wound that caused death. There were 4 deaths from smallpox.

MISSOURI.

New Police Surgeons.—Dr. Herbert A. Longan, Kansas City, has been recommissioned police surgeon, and has appointed Drs. H. M. LaRue, E. J. Morrow, and W. L. McKittrick as assistants.

Will Now Distrust Burglars.—Dr. William Frye, Kansas City, who did not trust banks and kept his money with him, was visited by burglars who stole $6,500, and in addition attempted to asphyxiate the family by gas.

St. Louis Deaths.—For the week ended August 27, 193 deaths were reported to the health department, of which 21 were due to consumption; 26 to diseases of the digestive apparatus; 19 to heart disease and 17 to violence.

Personal.—Dr. Frank S. Vernon, Charleston, has been appointed assistant superintendent of the Farmington Hospital.——Dr. W. W. Graves has returned to St. Louis, after an absence of four years in Europe.——Dr. Thomas J. Baskett, Mexico, has been appointed coroner of Audrain County, vice Dr. Charles T. Varnon, deceased.

NEW YORK.

Personal.—Dr. Grover Wende, Buffalo, has sailed for Berlin to attend the International Dermatological Congress.——Dr. Frederick C. Peterson, Watertown, has moved to Syracuse.

Regents Win.—Dr. Stanley Darlington, Buffalo, who was tried for practicing without a license and brought suit to compel the State Board of Regents to issue him a certificate, has lost again. Darlington's attorney claimed the regents were prejudiced against him, but as it was shown that the regents offered to give him a hearing if he would deny under oath, their charges that he cheated at an examination and practiced without a license, the court said he should have taken their offer, and so denied him a writ of mandamus.

State Hospital Report.—The thirty-third annual report of the Buffalo State Hospital has been issued. The vacancy on the board of visitation, made vacant by the death of Dr. Lothrop, has been filled by Dr. William C. Krauss. While the hospital is fortunate to have been relieved of 200 of its patients by transfer to the Gowanda State Hospital, the reduction in number seems to have been temporary only. The number of patients in the hospital is 1,822; during the year 429 were admitted, of these 94 were discharged recovered, 89 improved, 229 unimproved, and 164 died. The percentage of recoveries to total number of admissions was 21.91.

New York City.

Contagious Diseases.—There was reported to the sanitary bureau for the week ended August 20, 420 cases of tuberculosis, with 130 deaths; 224 cases of diphtheria, with 26 deaths; 120 cases of typhoid fever, with 20 deaths; 73 cases of measles, with 7 deaths; 54 cases of scarlet fever, with 5 deaths; and 24 deaths from cerebrospinal meningitis.

Personal.—Dr. Otto C. Thum and party had a narrow escape from drowning on August 25. They had drifted out to sea in an unmanageable catboat. When reached by lifesavers they were nearly exhausted from efforts at bailing, and had despaired of help.——Dr. George D. Hamlen sailed on the *New York*, for Europe, August 27.——Dr. and Mrs. Wendell C. Philips, who have spent the past month traveling, have returned to their summer home, Pawling.

New Government Laboratory.—The Department of Agriculture will establish a chemical laboratory for the examination of imported food products in the appraiser's stores building of the Treasury Department, which will be opened September 5. This is the first of a number of port laboratories to be established in order to prevent the introduction of impure food products into the United States. Eighty per cent. of the food importations arrive at New York, and samples from each cargo hereafter will be taken direct from the appraiser to the laboratory.

Seek to Revoke Sydenham Charter.—Charges have been made to the State Board of Charities against the trustees and managers of the Sydenham Post-Graduate Course and Hospital, charging that the physicians who joined the staff had to pay a certain amount down and a stated sum monthly. It is also charged that this institution is conducted in an unsanitary, unlawful, negligent and improper manner. The officers of the institution declare that the charges are utterly groundless and are made by men who have been discharged.

Fresh Air Medicine.—The New York Association for Improving the Condition of the Poor has given over 3,100 mothers and children excursions for ten days, and nearly 17,000 day excursions this summer. This work has greatly aided in keeping down the summer death rate among the poor. The resources of St. John's Guild have been severely taxed this summer, and the reason is given that never before has there been so much severe sickness among the poor children and babies. The institution maintains a floating and a seaside hospital, and since its first trip, July 5, it has cared for more than 25,000 sick children.

Death and Mortality Rate of Diphtheria.—In the Boroughs of Manhattan and the Bronx, from 1893 to 1903, inclusive, the following tables, recently published by the department of health, are interesting:

Period.	Cases.	Deaths.	Mortality per cent.
1893	7,021	2,558	36.4
1894	9,641	2,870	29.7
1895	10,353	1,976	19.1
1896	11,890	1,763	15.4
1897	10,898	1,590	14.6
1898	7,503	923	12.2
1899	8,240	1,087	13.1
1900	8,964	1,121	12.4
1901	7,726	1,227	15.9
1902	10,429	1,142	10.9
1903	11,662	1,302	11.2

The use of diphtheria antitoxin was begun by the department of health, Jan. 1, 1895, but owing to bitter opposition it did not come wholly into general use until 1898. Since Jan. 1, 1895, immunizing injections of antitoxin have been administered to over 13,000 individuals, and of these 40, or 3 per cent., contracted diphtheria of a mild type; with one fatal termination. Since 1895 the department of health has gathered records of 15,792 cases which had been injected with antitoxin; excluding the moribund cases, 1,138 died, giving a case mortality of only 7.5 per cent. Cases treated early in the disease gave almost no mortality.

OHIO.

Hospital Incorporated.—The Jane M. Case Memorial Hospital, the site and building for which was purchased for $10,000, bequeathed by the late Mrs. Case, has been incorporated.

Accidents and Operations.—Dr. Nathan S. Hatfield, Bowling Green, recently underwent a serious operation in a Chicago

hospital.——Dr. William H. Buechner, Youngstown, who was recently operated on for an infected operation wound, is making a good recovery.——Dr. James W. Graham, West Williamsfield, tripped while alighting from a train, was run over and crushed his left foot, necessitating the amputation of the toes.——Dr. Cary F. Legge, Newark, fell, while making a professional call, broke a rib and sustained severe contusions.

Continued Prevalence of Rabies in Gallia County.—Despite the warm weather there seems to be no marked subsidence in the endemic rabies among the dogs, cattle, and swine in and around Gallia County and the adjacent country. A report recently made to the pathologic laboratory of the Ohio Hospital for Epileptics indicated that some fifteen or twenty dogs had, within the last three months, developed rabies in a rural neighborhood less than a mile square. Fortunately not a person was bitten by these dogs, which were promptly dispatched. Because of the extensive prevalence of the disease, grave fears are entertained for the safety of the public when, with the advent of cool weather, even more active manifestations are to be looked for.

Personal.—Dr. Ephraim J. McCollum, the oldest practitioner of Tiffin, was recently entertained by the Seneca County medical Society, and presented with a silver water pitcher.——Dr. Franklin H. Lamb, Glendale, has been made lecturer on physiology in the Miami Medical College, Cincinnati.——Dr. McKendrie C. Smith, health officer of Columbus, has received the additional appointment of sanitary expert, with a salary of $1,200, and the duty of preventing water pollution.——Dr. George R. Love, first assistant physician at the Toledo State Hospital, has resigned, and will take up general practice in Toledo.——Dr. Charles C. Walker, Cleveland, sailed, August 18, from San Francisco, for his mission post at Wakawn, Siam.——Dr. Thomas J. Arundel, Youngstown, sailed for Europe August 20.——Dr. H. Stow Garlick has been appointed surgeon to Battery B, Ohio N. G., Cincinnati, vice Dr. William H. Rothert, resigned.——Dr. Robert C. Rind, Springfield, has been appointed chief surgeon of the Springfield, Troy and Piqua Railway.——Dr. Isaac D. Jones, Walnut Hills, Cincinnati, returned from Europe, August 22.

GENERAL.

Dr. Goodhue Improving.—Dr. E. S. Goodhue, Hohualoa, Hawaii, who was seriously injured in a runaway while making calls, July 16, is slowly improving. One rib and the left shoulder were broken, besides other injuries.

Dr. Millican Goes to St. Louis.—Dr. Kenneth W. Millican has resigned the position of associate editor of the *New York Medical Journal*, which he has held since 1898, in order to assume the editorship of the *St. Louis Medical Review*, the duties of which he takes up shortly.

The Union of Old German Students in America will entertain the German scientists who attend the St. Louis Congress of Arts and Sciences, at a "Kommers" in Arion Hall, October 8. Most of the eminent guests are medical men. Further particulars may be had of Dr. A. Ripperger, secretary, 50 West 130th Street, New York City.

American Roentgen Ray Society.—The fifth annual meeting will be held at St. Louis, September 9, 10, 12 and 13. The sessions will be held in the morning only, at the Louisiana Building, 911 N. Vandeventer Ave. The afternoons, evenings and the intervening Sunday will be left open for general sightseeing. Hotel headquarters of the society will be at the Grand Avenue Apartments, Grand Avenue and Morgan Street. An exhibit of the *x*-ray apparatus will be a feature of the meeting.

Ohio Valley Medical Association.—The sixth annual meeting will be held at Evansville, Ind., November 9 and 10. This association has for its boundary Kentucky, Indiana, Illinois and Ohio, and has a membership of 300. The association stands for a higher standard in medical education, for a decrease in the number of medical schools to our needs, for a uniformity in the requirements to practice medicine in the various states, for a reciprocity between the states, and for a closer bond of friendship between the members of the profession. All physicians who are in good standing in their county and state societies, and who are thus agreed will be most cordially welcomed at the meeting. Dr. A. J. Lieber, Henderson, Ky., is secretary of the association.

FOREIGN.

Eiselsberg Declines Invitation to Berlin Chair.—The chair of surgery left vacant by König's retirement after the completion of the model surgical clinic under his supervision, was offered to Professor von Eiselsberg of Vienna, with a tempting salary. He does not care to leave Vienna, and has declined the offer.

Completion of the Great Policlinico at Rome.—Millions have been spent during the last few years at Rome in the construction of a great modern hospital, to be a model in every respect. Medical visitors to Rome have all commented on the vast scale and fine appointments of this new institution, with its spacious surroundings, apart from the heart of the city. It was formally inaugurated, August 4, and 500 patients from the other hospitals were transferred to the completed wards of the great "Policlinico Umberto 1," as it is to be called. Three of the pavilions are devoted to surgery, seven to general medicine, and one to contagious diseases. Each pavilion has a capacity of 80 beds. The pavilions are separated by very wide and long galleries. The appliances for heating, lighting, ventilation, etc., are according to the latest and most approved systems, and there have been several innovations in various lines. The operating in one of the surgical amphitheaters is done in a glass compartment, the spectators without, able to see through the glass what is being done, while absolute asepsis prevails around the operating table. The opening of the new hospital relieves the older hospitals and enables them to be set apart for certain classes of patients, thus specializing them to a certain extent.

LONDON LETTER.

Cancer in Wild Animals.

At the third meeting of the general committee of the Cancer Research Fund, the annual report which was read contained an account of most important work, and brought to light several facts which have a fundamental bearing on several of the crucial problems of cancer, and give definite indication of the line of future inquiries. An extensive series of tumors from various domestic animals has been examined, many from lower vertebrates, including 14 cases of carcinoma in fish. Two cases of malignant growths in fish are of special interest because they were derived from marine fish living in a state of nature. A similar interest attaches to a spheroidal-celled carcinoma discovered in a wild mouse. These are the first fully authenticated cases of cancer in wild animals. Upward of 2,000 specimens were examined, derived as follows: Human, 266; horse, 116; cow, 99; dog, 247; cat, 43; pig, 8; frog, 6; bird, 13; mouse, 850; fish, 80; rat, 28; rabbit, 32; sheep, 8; goat, 7; bull, 1; miscellaneous, 329. The general results obtained may be summarized thus: Cancer has been found to pervade the whole vertebrate kingdom and to present constant fundamental characters. The great diversity of the food, habitat, and conditions of life generally shows that such external agencies have no causative influence. The histologic characters, methods of growth and the absence of specific symptomatology lead to the conclusion that the causative factors must not be sought outside the life processes of the cells. Growth after transplantation is possible in the bodies of animals of the same species. Certain cells of malignant growths of man and animals were found to present nuclear changes similar to those by which the sexual cells are prepared for fertilization and the fusion nuclei in a manner equivalent to conjugation has been repeatedly demonstrated in transplanted tumors of the mouse, and has acquired increased significance from the discovery of the like phenomenon in a primary tumor from man. If it should be generally established that cell conjugation takes place this would afford a harmonious explanation of all their features and the initiation of the cancerous cycle. Under the heading of "Statistical Investigations" the report furnishes a large amount of information and shows that certain popular beliefs as to the immunity of certain countries or races of men can not be sustained. Specimens have been obtained from the natives of regions of Africa in which cancer had not been discovered before. The report of the treasurer appeals for more support. Even with the aid of Mr. W. W. Astor's munificent contribution of $100,000 the income does not meet current expenses.

DUBLIN LETTER.

Dublin Hospitals.

As certain Dublin hospitals receive government grants, they are each year inspected by the board of superintendence. The annual report of this board is usually of some interest, for the statistics as to income, expenditure and work. The report is itself usually of a somewhat perfunctory nature, but this year, the board having apparently puzzled their brains to find something novel to write about, give a discursive and rather silly lecture on the application of *x*-rays and other rays to medicine and surgery. It is of course obvious that no general hospital is properly fitted unless it contains an *x*-ray department, and

the board wastes its breath in laboring this point. But when they also suggest that "necessity exists in every well-equipped hospital for the installation of an apparatus for the use of the Finsen treatment," they are suggesting a very improper extravagance. The Finsen treatment is as yet in its probationary stage, and it would be as foolish as it would be unnecessary for each of the very many small general hospitals in Dublin to incur the large expense such an outfit would demand. The requirements of the city, as regards Finsen treatment, are quite adequately met by the hospitals which already are furnished with the apparatus. The reports on the individual hospitals are in the usual complacent style of indiscriminate praise or mildest possible censure. To read them one would think that each of the hospitals was managed in a perfectly satisfactory manner, an opinion very far from being justified. For instance, we find no notice taken of the fact that the outbreak of smallpox with which Dublin was troubled last year, took its spread from the imperfect disinfection practices in a fever hospital where one imported case had to be treated. In the report on this same hospital there is no mention made of any precaution being taken to prevent secondary infection, yet it is notorious that secondary infection is there very common. Similarly the board of superintendence do not draw any attention to the fact that it is a by-law of another of the hospitals they have supervised that any official of the hospital taking part in, or conniving at, any examination of a dead body in the institution is *ipso facto* dismissed. Yet, if government superintendence is to do any good, it should aim at correcting such faults in management as these.

Presentation to Professors Coffey and Ryan.

An interesting ceremony took place a few days ago at the Catholic University School of Medicine, when the faculty, with a number of past and present students, met to present Dr. Coffey and Dr. Ryan tokens of friendship and regard on the occasion of their approaching marriages. Both men stand high in the esteem of the profession as successful and inspiring teachers, as well as for their personal qualities, while their contributions to the sciences—physiology and chemistry—which they respectively teach, maintain the reputation of the Dublin school.

Health of Dublin.

We are so used to regarding Dublin as one of the most unhealthy, cities in Europe, if not indeed the most unhealthy, that it came as a pleasant surprise to us to learn recently that the death rate was approaching the figures that obtain in other cities in the kingdom. In one week indeed the rate ran as low as 16.7 per thousand, but unfortunately the improvement was only temporary. The real cause of the high mortality in Dublin is the fearful condition of the tenement houses, in which the majority of the poorer classes live, and to grapple with this serious problem no attempt has yet been made.

The Irish Medical Association.

The annual meeting of the Irish Medical Association, which was held here recently was occupied chiefly, as might be expected, with the demands for reform in the Poor Law Medical Service. Though progress seems slow there is no doubt that the public is at last being persuaded that the present system is bad. Mr. Tobin has succeeded Dr. Leonard Kidd as president of the association.

Correspondence.

International Congress of Arts and Science.

WASHINGTON, D. C., Aug. 26, 1904.

To Members of the Medical Profession:—The organizers of the International Congress of Arts and Science, to be held at the Universal Exposition, St. Louis, Sept. 19 to 25, 1904, desire to invite the special attention of your profession to the unexampled opportunity which it offers to meet and hear a great number of eminent men of learning. It is expected that more than three hundred eminent scholars of Europe and America will deliver discourses in the various departments and sections of the congress, and that several hundred shorter communications will be made by those present. Among the foreign members of the profession who have accepted invitations to speak are Profs. Brunton, Semon, Ross, Celli, Orth, Liebreich, Allbutt, Kitasato and Escherich. Dr. William Osler is chairman of the department.

It is the desire of the directors of the fair and of all concerned in the organization that professors and instructors in our colleges and universities, and members of the learned professions generally, shall, so far as possible, do honor to our distinguished visitors by attending the meetings of the congress. For this no fee is charged and no formality is necessary except enrollment on arrival. It is, however, desirable to apprise Mr. Howard J. Rogers, director of congresses, Universal Exposition, St. Louis, in advance, what departments of the Congress one desires to attend. A program of its proceedings, with such other instructions as may be necessary, will be sent by Mr. Rogers on application.

SIMON NEWCOMB,
Chairman of the Organizing Committee.
NICHOLAS MURRAY BUTLER,
Chairman of the Administrative Board.

Method of Making Yellow Oxid Ointment.

BURLINGTON, IOWA, Aug. 23, 1904.

To the Editor:—I notice a suggestion in Dr. Bulkley's "Notes on Ointments," which I consider inadequate, if not misleading. Otherwise we would not have the perennial complaint from ophthalmologists that it is hard to get satisfactory "yellow oxid ointment." This suggestion is that gritty substances should first be rubbed up with a few drops of oil in a mortar to make a fine paste. I object to the use of the mortar because a sheet of plate glass and a spatula are better. Only with the latter can one be absolutely sure that no gritty particle is missed. No oil or water is needed. The spatula, holding a modicum of the base (just enough to do it), picks up the grits, which are then rubbed out until they can be rubbed no farther, and the spatula cleans itself. Not only can every particle of grit thus be felt, but one can also hold the plate up to the light for inspection with a magnifying glass. The base is now added in mass and the mixing completed with the spatula. I had the pleasure of demonstrating this method to the Section on Ophthalmology, producing a perfect yellow oxid ointment, at the Denver session of the American Medical Association.

H. B. YOUNG.

North Carolina's Early Law on Practice.

KINSTON, N. C., Aug. 24, 1904.

To the Editor:—I noticed in THE JOURNAL, August 13, that you state in an editorial that Illinois had the first effective law regulating the practice of medicine. North Carolina really should have that distinction, her law having been passed in 1857. The remarkably high standing of her profession, which we believe to be higher than any other state, on an average, is due to her splendid medical laws, which have been "effective more than a quarter of a century."

JAMES M. PARROTT,
Member of the Carolina State Board of Medical Examiners.

Queries and Minor Notes.

ANONYMOUS COMMUNICATIONS will not be noticed. Queries for this column must be accompanied by the writer's name and address, but the request of the writer not to publish his name will be faithfully observed.

ARISTOCRACY IN MEDICINE.

B. writes: In an issue of THE JOURNAL published within the past year, attention was called to the fact that the degree of M.D. had a very wide range of value. It was pointed out that all classes of medical schools, the bad, the good, and the best, conferred the same degree, and that, unfortunately, no means existed whereby the value of the M.D. could be gauged. All were M.D.'s; all were physicians. This being so, I should like to have a careful consideration and an opinion on the following question: Is it unprofessional for a physician to insert in very small type on his sign the degrees he has and from what institutions, the lettering to be invisible except on close inspection? This additional in-

formation (for example: A. B., Princeton; M.D., Harvard) is certainly of benefit to the public. It shows that the physician has obtained a good general education and that he has equipped himself for the medical profession by at least eight years of study, and therefore has some claim to the confidence of the community. He should get some credit for his long and thorough course, and this is a way of making an M.D. mean something. Look at the difference in time. One man goes through the grammar school and then studies medicine four years. The other goes through the grammar school, then high school four years, then college four years, then medical school four years, then hospital two years. Why should he not demonstrate that four does not equal (4+4+4+2) 14. I think the day will come when this negative demonstration will be made by all those who can do so, and that, too, by means of the sign. I can see nothing unprofessional in it. On the other hand, I think it is a suggestion which could be widely adopted to the profit of the physician, the profession and the public. Please do not reveal my name in any way or to any one.

ANSWER.—The question raised is not new. Custom decrees that it is not good taste to place on one's sign the name of one's school of graduation. To run counter to this custom would not be "unprofessional," but we think that it would be unwise. Our correspondent overlooks in his letter the fact that all sorts of physicians, "the bad, the good and the best," are at times graduates from the very best of medical schools. In the last analysis every physician must rise or fall on his own individual ability and character. It can not be otherwise. The assumption that a physician might command success on the reputation of his alma mater refutes itself. If such were the case the cleverest wicked men among those contemplating the study of medicine would attend solely those schools whose reputation would insure to the holders of their degree professional standing and success. Nothing would be gained in the end by the adoption of such a custom, while many good and capable men who have been forced by one or other circumstance to attend a school of low degree would suffer unmerited ostracism. The school does not make the physician. Our correspondent's plan would make it too easy for the lazy and the indifferent, who were just capable of scraping under the minimum requirements of fourteen years of preparation. The profession has already adopted the better course, viz.: having the state require a certain standard of personal, general and professional education. Unfortunately our own medical schools, while on the whole worthy of all admiration, have shown that, unaided, they can not maintain the required standard. The best feel the competition of the poorest. There is many a medical school whose degree granted a decade or two ago was more worthy of respect and confidence than that of the same school to-day, and vice versa. In this country at least our profession must be democratic and not aristocratic, as proposed by our correspondent.

EFFECTS OF FORMALIN ON TISSUES.

DR. FREDERICK C. MURRAY, Cedar Rapids, Iowa, writes: Some months ago I read a brief reference to the action of formaldehyd on the abdominal contents or other tissues of the recently dead body. When formalin embalming fluid was used certain marked changes took place in certain tissues, which simulated pathologic lesions and might lead to errors in postmortem diagnosis. Would it be presumption to suggest, provided information is definite and reliable as to formaldehyd's action under such circumstances, that some publicity be given to it, perhaps among "Minor Notes." In my limited experience it has seemed to me that this action of formalin embalming fluid has very seriously confused the findings at several postmortems recently witnessed, so that I feel I am not the only person who needs enlightenment on this possible source of error.

ANSWER.—Embalming with formaldehyd alters the consistence of all the organs greatly, as also their appearance, making accurate diagnosis difficult, even the most expert, and in many respects impossible. The chief difficulties that might be mentioned are the following: By vigorous use of the embalming trocar the undertaker usually punctures the stomach and intestines full of holes, thus emptying their contents into the peritoneal cavity and making difficult or impossible any search for suspected perforations or chemical examination of their contents in suspected poisoning cases. The peritoneal coat is so roughened that recognition of an early or acute form of peritonitis is usually impossible. Firm contraction of the muscular walls of the intestine occurs in response to the stimulus of the formalin so that local areas of contraction appear that may be mistaken by the uninitiated for strictures. Stomach and intestines are hardened into such a leathery condition that there are some technical difficulties in their examination, but not insurmountable. All the organs that the formalin penetrates are made very hard, almost woodeny in consistence, but as the distribution of the hardening fluid is often very irregular some confusing conditions may appear. The hardening of the kidneys is very easily mistaken for the induration of a chronic nephritis, and similar errors may be made in the case of the liver and spleen. The coagulating action of the fluid practically precludes the detection of cloudy swelling and other finer changes. In the lungs there are especial difficulties, because a soft exudate may be so hardened as to change its appearance entirely, and so a hypostatic edema may be mistaken for a pneumonia. A bronchopneumonia of simple type is often indistinguishable from a tuberculous lesion under these conditions. On the other hand, hardening of the brain by formalin, if the injection has been sufficiently efficient to do this, is often of considerable aid in removing the brain and in its examination, making it much easier to ascertain relations of lesions, etc. It is, indeed, a recognized procedure in autopsies to inject the carotids with formalin for this very purpose, as a hardened brain can be removed with much less danger of producing artefacts than can a fresh one. And also the histologic findings are often very beautiful in tissues taken from these bodies in which every cell while still warm has been quickly surrounded by the hardening fluid, although with some of the fluids used there is sometimes a heavy precipitate formed that is very troublesome. Many lesions of the parenchymatous organs should be left for diagnosis in these embalmed bodies until after microscopic examination. It is hardly necessary to add that one of the most serious objections to embalming of bodies is that it precludes absolutely any bacteriologic examinations, which in many cases are by far the most important part of the autopsy.

METHODS OF PRODUCING EUTOCIA.

A., of Michigan, writes: Kindly inform me whether there is known to the medical profession any remedy which, if given during pregnancy, will cause the pelvic bones to "loosen" up, or the pelvic muscles to relax and thus delivery be made easier. We have here a brother practitioner who advertises that while "East" he became acquainted with such a remedy and that the same is not yet revealed unto the medical fraternity who have not been "East" to learn about it. Now this would all be absurd if people would only think, but many do not make such an effort and not a few have already begun to take this remedy. A good friend of mine whose wife is pregnant came to me a few nights ago and asked me about this new discovery and whether it were true that our brother has a monopoly on the article in this part of the world. Will you kindly state in THE JOURNAL whether there is any such remedy?

ANSWER.—Our correspondent seems to possess the only satisfactory means of combating the absurd claims of his humbugging colleague—an indulgent sarcasm. It is now generally, although not universally, admitted that there is during pregnancy a slight increase in the mobility of pelvic articulations due to an increase in the succulence of the ligaments and capsulary membranes. A similar change in the soft parts composing the pelvic floor also favors the formation of the normal obstetric canal. These changes are subject to slight physiologic variations, but we know of no pills or powders that affect them. Various methods of making the child-bearing process easier in cases where the pelvis is normal in size and possible when the pelvis is contracted have been sought from time to time. They generally aim at reducing the size of the child or making its bones more pliable. The dietetic treatment is most common. Sometimes the mother has been partly starved, sometimes she is kept on a fruit diet, and more recently Prochownik has proposed an anti-obesity diet for the last two months of pregnancy to prevent the accumulation of fat by the fetus. Occasionally drugs have been given which disturb the appetite and thus interfere with the growth of the child by lessening the nutrition of the mother. All such attempts to interfere with Nature except, perhaps, a careful use of Prochownik's diet, are apt to be harmful if they are not simply useless and absurd.

PRIVATE PAID QUIZ COURSES.

DR. D. W. EVANS, Scranton, Pa., writes: There is one curse that should be blotted from the medical schools of this country, and that is the private paid-for quiz course, given by the teacher, but which is usually conducted by a super, or perhaps a super number two, otherwise known as the men next to the professor. First of all it is cash in hand, and the poor student who has not the cash feels at once the cutting lance of class legislation (for the faculty says nothing, which means O K), and many a student poor financially has been made dishonest as well as discouraged by such proceedings. When it is as generally known as is the unchangeableness of the laws of the Medes and Persians that "if you take my course you pass my chair." A little time ago while taking in some of the medical schools I noticed in one city in particular it was common, and I took note in one of the oldest and most dignified institutions in America had not less than four quiz courses posted, and each one in such a conspicuous place and so large and plain that they would even scare the dispensary patient who happened to run against them, and especially would it scare him when $100 was the price, a larger sum than is paid for an entire year's tuition in some of the best institutions of the land. And all this for one branch, why not for all branches, and not have a school at all? Then, other things being equal, none but the wealthy could even entertain an idea of medicine, let alone support themselves while going through, as have hundreds of young men who are our brightest and keenest men to-day. I say abolish it. Devise some other method of robbing the student and not under the cloak of a professorship. I trust the Council on Medical Education of the American Medical Association and other organized educators will investigate and abolish one of the remnants of feudalism.

BLOOD EXAMINATION IN HYDROPHOBIA.

W. writes: Is there any test by which it can be determined whether an individual bitten by a rabid dog shall or shall not develop hydrophobia? I treated a patient recently who had suffered the slightest abrasion of the skin from the tooth of a dog supposed to be rabid. Later the patient consulted another physician, who withdrew some blood from the patient's arm and tested it for the "poison" of hydrophobia. I wish to ask if there is any such test, or was it done for the mental effect on the patient and "fee" effect on the physician.

ANSWER.—There are several things to be said of this case. First, the story comes through the patient and is, therefore, very liable to the distortion of whatever medical procedure may have been attempted. Second, no poison of hydrophobia and no germ of that disease can be observed in the blood. Third, the physician, however, may really have thought, through ignorance, that something could be seen in the blood. Fourth, the terrible condition of lyssophobia, often impossible to differentiate from the true hydrophobia, may lead a physician to take measures otherwise unjustifiable. While we would not recommend such a procedure, we could certainly sympathize with the physician who, at his wit's end with a highly susceptible patient acquainted with hydrophobia, should take the measure you have briefly outlined and use it simply as suggestive treatment to control the patient.

EFFECT OF ICE BAG ON LOCAL TEMPERATURE.

DR. J. T. GRAY, Stillwater, Okla., asks: What will be the effect on the temperature of the deep viscera when an ice bag is kept continually on the abdomen during fever? Will the temperature of the bowels be lowered below the temperature under the tongue?

ANSWER.—There is probably a slight depression of the temperature of the deeper viscera when an ice bag is kept on the abdominal wall in fever, and it may happen that the temperature in these organs would be lowered below that of the mouth, and if heat were applied the opposite would be true. The effect, as a rule, is, however, slight. We do not know of any observations bearing directly on this point. But we may assume that the cooling effect of ice applied to the abdomen, and which is so perceptible to the hand or to the surface thermometer, is conveyed to a slight degree to some depth, i. e., the nearer to the ice the greater the cold, and vice versa.

SMALL INSURANCE EXAMINATION FEES.

DR. O. A. REA, Culver, Ind., writes: I read in THE JOURNAL that "The Des Moines physicians adopted a fee bill for minimum charges of . . . $2 to $5 for day visits . . . and $2 for life insurance examinations." In every case of life insurance the whole contract depends on the medical examination. An attorney at law would charge from $25 up to an unlimited amount for like vital responsibility. Compared with other items on the same fee bill the charge is ridiculously low—$5 for an ordinary visit, perhaps to a poor, suffering neighbor, and $2 to $3 for a vital professional service to a rich corporation. Such cringing to grasping corporate demands is beneath the dignity of the profession of medicine. No wonder the laity is slow to acknowledge our claims and pretensions to benevolence and self-sacrifice. "Comparisons," as noted, "are odious."

BOTTLE FED INFANTS ON SHIPBOARD.

DR. E. J. WHITAKER, Burlington, Iowa, asks what facilities are to be had on board ship, crossing the Atlantic, for feeding bottle-fed infants.

ANSWER.—Cow's milk, sterilized and hermetically sealed, is carried on ocean steamships in the refrigerators and is thus provided sweet and wholesome for daily use. A baby may be supplied from the ship's store or special milk may be delivered to the steward for daily use of the individual. One should correspond with the steamship company for further details.

Marriages.

ASPINWALL JUDD, M.D., to Miss Mariona Temple Beardsley, both of New York City, August 12.

HARRY W. KEATLEY, M.D., U. S. Navy, to Miss Helen Harmon Smith, at Norfolk, Va., August 17.

W. KENNETH MCCOY, M.D., Gum Spring, Va., to Miss Jean Page Morton of East Leake, Va., August 3.

BENJAMIN R. SCHENCK, M.D., Detroit, Mich., to Miss Jessie McCallum of St. Catharines, Ont., at Niagara on the Lake, Ont., August 17.

Deaths.

William Rice Pryor, M.D. College of Physicians and Surgeons in the city of New York, 1881, of New York City; a member of the American Medical Association, International Gynecological and Obstetrical Congress, Southern Surgical and Gynecological Society, New York State Medical Association, American Gynecological Society, New York Academy of Medicine, and New York Obstetrical Society; consulting gynecologist to St. Vincent's Hospital, gynecologist to New York Polyclinic Hospital, City Hospital and St. Elizabeth's Hospital, eminent as an obstetrician and gynecologist, and author of several text-books on gynecology, was taken ill at his summer residence, Glen Eyre, Pa., and died at St. Vincent's Hospital, New York City, August 26, as a result of persistent overwork, aged 46.

Henry Bruce McCarroll, M.D. College of Physicians and Surgeons in the City of New York, 1881, a member of the Medical Society of the State of New Jersey, and for four years instructor in general medicine in the New York Post-Graduate School and Hospital, died at his home in Morristown, N. J., August 16, from hypostatic pneumonia, aged 47.

Harriet R. Goodrich, M.D., Tufts College Medical School, Boston, 1900, a member of the American Medical Association, died at her home in Salem, Mass., August 23, from injuries sustained by falling from an electric car a few hours before, aged 35.

Philip T. Peiffer, M.D. Department of Medicine of the University of Pennsylvania, Philadelphia, 1859, died at his home in Drums, Butler Valley, Luzerne County, Pa., August 18, from Bright's disease, after a prolonged illness, aged 74.

Robert Mathison, M.D. New York University, 1848, who never practiced, but was engaged in the drug business in Brooklyn, died at Ingersoll Grove, near Springfield, Mass., August 17, aged 86.

H. Grant Artis, M.D. Medical College of Ohio, Cincinnati, 1890, of Owensboro, Ky., died recently in a hospital in Cincinnati, from heart disease, and was buried, August 21, at Winchester, Ky.

John Henry McAden, M.D. Jefferson Medical College, Philadelphia, 1857, a surgeon in the Confederate service during the Civil War, died suddenly at his home in Charlotte, N. C., August 15.

Karl Heiter, M.D. University of Kieff, Russia, 1852, the oldest practitioner of Sandusky, Ohio, died suddenly at his home in that city, August 14, from paralysis of the heart, aged 76.

James Larimore, M.D. Cincinnati College of Medicine and Surgery, 1864, died at his home in Newark, Ohio, August 18, after a long illness, from valvular heart disease, aged 64.

Thomas W. Poole, M.D. Medical College of Alabama, Mobile, 1900, of Faunsdale, Ala., died at Tucker Springs, Tenn., after a prolonged illness, following pneumonia, August 18.

John S. Coman, M.D. New York University, New York City, 1897, of New York City, was drowned, August 16, after saving a woman from drowning in the Shrewsbury River.

Anna M. Shattuck Parker, M.D. Illinois, 1878, of Chicago, died at the home of her daughter in Marshall, Mich., August 18, from heart disease, aged 72.

Charles L. Enslee, M.D. Rush Medical College, Chicago, 1891, died at his home in Chicago, from consumption, after a short illness, August 23, aged 44.

Frederick J. Nott, M.D. New York, 1877, of New York City, died at the Marine General Hospital, Portland, from acute uremia, August 16, aged 52.

Samuel L. Chapin, M.D. Jefferson Medical College, Philadelphia, 1885, was shot and killed at his home in Saybrook, Ill., August 18, aged 43.

James B. MacGregor, M.D. Pennsylvania, 1901, health officer of Ballard, Wash., was killed in a train wreck near Eden, Colo., August 7, aged 33.

Charles M. Savage, M.D. Pennsylvania, 1870, died at his home in Columbus, Ohio, August 19, from dropsy, after an illness of one year, aged 57.

Levi Westfall Elliot, M.D. Illinois, 1875, died at the home of his son in Chicago, August 24, after a long illness, aged 69.

John Martin Baird, M.D. University of Louisville, 1846, died at his home in Charlestown, Ind., June 28, aged 86.

George D. Kughler, M.D. New York, 1850, died, August 12, at his home in Fayetteville, N. C., aged 77.

Death Abroad.

Sir William Mitchell Banks, M.D. University of Edinburgh, 1864, gold medaler of that year; afterwards demonstrator of anatomy in Glasgow, and in 1869 Fellow of the Royal College of Surgeons of England; and one of the most eminent anatomists and surgeons of Great Britain, died at Aix-la-Chapelle, August 9, aged 61. He was consulting surgeon of the Liverpool Royal Infirmary and professor and emeritus professor of anatomy at the University of Liverpool. He took an active interest in the organization of the Liverpool School of Medicine. In recognition of his services to surgery and science he was knighted in 1899. He was particularly interested in the study of cancer and delivered the Lettsomian lectures on Cancer of the Breast in 1900. As a teacher of anatomy and as a clinical professor he was unequaled in Great Britain. He was a member of the British Medical Association and president of the Lancashire and Cheshire Branch. He was president of the Liverpool Biological Society and of the Liverpool Medical Institution, vice-president of the Medical Society of London, and a corresponding member of the Association of Military Surgeons of the United States.

Book Notices.

MATERIA MEDICA, PHARMACOLOGY AND THERAPEUTICS; INORGANIC SUBSTANCES. By Charles D. F. Phillips, M.D., LL.D. (Abdn. and Edin.), F.R.S. (Edin.), Hon. Fellow Medico-Chirurgical College, Pennsylvania Member of the Academy of Medicine of America; Examiner of Materia Medica, University of Aberdeen, etc. Third Edition. London, New York and Bombay: Longmans, Green & Co.

This edition has been thoroughly revised and many pages entirely rewritten. In the first chapter the author gives an excellent résumé of the recent investigations in the action and uses of oxygen and ozone in medicine. We note also the chapter devoted to water, its action and uses, and can say we know of no general treatise which has given this subject such complete and practical consideration. Detailed description of the many and varied uses of water in the domain of therapeutics is lacking in works of this character. This chapter will appeal to many who have only a most general concept of the use of water in disease. Full consideration is given both the internal and external uses of water, including sea bathing, medicated waters, describing particularly the value of many of the famous natural waters. We commend the general classification of subjects based on the chemistry of the elements and drugs. The gases and non-metallic elements are first considered, then the halogen group with reference to the newer derivatives from iodin, the glycerophosphates, cacodylates, etc. The acids are next in order and the text completed by the description of the metals. The author has quoted liberally from the recent literature, making the book up to date. The method of description of a drug and its preparations is systematic and complete, the physical characters, the tests, the physiologic action, toxicology and therapeutic application are each treated of in detail. Reference is made in the most of the chapters to the synergists as well as to the antagonists and incompatibles. This will be found of practical use to the beginners. The most important drugs, for example, arsenic, mercury, etc., are fully described and especial attention is given to the various diseased conditions they are used in and to the preparation most indicated. We would criticise the index, believing it to be of value as a reference for remedies in the treatment of disease, but very incomplete and of practically no value as a reference for the study of the individual drug. The index includes references made to drugs in the companion volume which is not yet published. A fuller index limited in its reference to this volume would be far more serviceable.

INTERNATIONAL CLINICS. A Quarterly of Illustrated Clinical Lectures and Especially Prepared Original Articles on Treatment, Medicine, Surgery, Neurology, Pediatrics, Obstetrics, Gynecology, Orthopedics, Pathology, Dermatology, Ophthalmology, Otology, Rhinology, Laryngology, Hygiene and Other Topics of Interest to Students and Practitioners. By Leading Members of the Medical Profession Throughout the World. Edited by A. O. J. Kelly, A.M., M.D., Philadelphia. With Regular Correspondents in Montreal, London, Paris, Berlin, Vienna, Leipsic, Brussels and Carlsbad. Volume II. Fourteenth Series. 1904. Cloth. Pp. 309. Price, $2.00. Philadelphia: J. B. Lippincott Co. 1904.

The excellency and value of this volume is in keeping with previous publications in this series. It contains many articles of more than usual interest, and notable among these are the series on diseases of warm climates contributed by Drs. Mason, McCrae, Jarvis, Smith and others. The papers on the treatment of arteriosclerosis by Nichols and Bierring, one on the "Utility of Digitalis in Heart Disease" by French, a medical clinic by Billings, and an article on "Bronchopneumonia in Children" by Abt, are also worthy of mention. The volume abounds in an unusual number of illustrations, especially the series of papers on diseases of warm climates. Illustrations always are valuable because they serve to elucidate a point far better than could be done by the best description. Eye pictures excel word pictures, and every article ought to be illustrated as much as is possible.

NORMAL HISTOLOGY. By Edward K. Dunham, P.H.B., M.D., Professor of General Pathology, Bacteriology and Hygiene in the University and Bellevue Hospital Medical College, New York. Third Edition. Revised and Enlarged. Illustrated with 260 Engravings. Cloth. Pp. 332. Price, $2.75. New York and Philadelphia: Lea Brothers & Co. 1904.

This is the third edition of a work which is deserving of more recognition than has been accorded to it in the past. The arrangement of the subject matter is excellent, the sequence being such as to lead the student up gradually, beginning with the cell and ending with the organs of the special senses. The introduction is excellent, but has hardly gone far enough to prepare the student adequately for what is to follow. Still, it may be assumed that the student has studied embryology and biology prior to his entrance in the medical college, and a more extended introduction would, therefore, take up space which can be devoted more profitably to a discussion of histology itself. The chapter on histologic technic is concise and to the point, not attempting to confuse the student by presenting many methods of tissue preparation and staining. The book abounds in excellent illustrations, most of which have been taken from other works on histology.

THE SURGERY OF THE HEART AND LUNGS. A History and Résumé of Surgical Conditions Found Therein, and Experimental and Clinical Research in Man and Lower Animals, with Reference to Pneumonotomy, Pneumonectomy and Bronchotomy, and Cardiotomy and Cardiorrhaphy. By Benjamin Merrill Ricketts, Ph.B., M.D. Cloth. Pp. 510. Price, $5.00. New York: The Grafton Press. 1904.

Those who are familiar with the large amount of experimental work on the heart and lungs which has been done by the author of this work will be very glad to have it all in book form. One finds here, however, not only the experimental work which in itself is very interesting, but also practically all that has thus far been accomplished in this comparatively newer field of operative surgery. The work is well illustrated by 87 plates, almost all of which are new and original, and the bibliography is very extensive, but so subdivided and distributed throughout the work as to facilitate ready reference to any particular subject. It is by experimental work that the borderline of surgery is constantly advanced, and one can not help but find in this work much that is of real value as well as of great interest.

State Boards of Registration.

COMING EXAMINATIONS.

New Hampshire State Medical Board, September 8-9, State House, Concord. Regent, Channing Folsom, Concord.

Massachusetts Board of Registration in Medicine, September 13-14, State House, Boston. Secretary, Edwin B. Harvey, M.D., Boston.

Missouri State Board of Health, September 19-21, St. Louis. Secretary, W. F. Morrow, M.D., Kansas City, Mo.

Iowa State Board of Medical Examiners, September 21-22, Capitol Building, Des Moines. Secretary, J. F. Kennedy, M.D., Des Moines.

Territorial Medical Examining Board of Oklahoma, September 28, Guthrie. Secretary, E. E. Cowdrick, M.D., Enid.

New York State Medical Examining Board, September 27-30, New York, Albany, Syracuse and Buffalo. Secretary, Charles F. Wheelock, Albany.

Connecticut July Report.—Dr. Charles A. Tuttle, secretary of the Connecticut Medical Examining Board, reports the written examination held at New Haven, July 12-13, 1904. The number of subjects examined in was 7; total questions asked 70, and percentage required to pass, 75. The total number examined

was 51, of whom 39 passed and 12 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Jefferson Medical College, Philadelphia	(1904)	84.4
Maryland Medical College	(1904)	78.3
McGill University	(1898) 79.1,	(1904) 80.6
University and Bellevue Medical College	(1904)	80.3
Univ. of Pennsylvania	(1901) 79.2, (1903) 81.3,	(1904) 77.5*
Cornell University	(1904)	81.2, 82.2
Johns Hopkins University	(1904)	81.0
University of Vermont	(1903) 81.3	(1904) 77.2
Baltimore Medical College	(1903) 75.5,	(1904) 78.6
Woman's Medical College	(1903)	84.8
College of P. and S., Baltimore	(1904) 76.7, 79.9,	83.3

Yale, (1903) 77.7, 80.9, 84; (1904) the grade of 80 was reached by one, 81 by one, 82 by four, 84 by one and 86 by three.
College of P. and S. of New York, (1876) 85.2, (1900) 75.8, (1902) 86.3, (1904) 83, 82.1, 76.6, 75.7.

FAILED.		
College of P. and S., Baltimore	(1903) 68.2,	(1904) 74.1
Maryland Medical College	(1904)	72.6
University of Naples	(1901) 72.7, 57.6;	(1902) 71.6
University of Maryland	(1904)	71.4
University of Vermont	(1898)	67.0
Baltimore Medical College	(1903) 72.7,	(1904) 74.3, 62.4
Yale	(1903)	73.6

23.5 per cent. failed.

The general average for all representatives of Yale who passed was 82.6. For those of the College of Physicians and Surgeons of New York was 80.6.

Nebraska August Report.—Dr. G. H. Brash, secretary of the Nebraska State Board of Health, reports the written examination held at Lincoln, August 3-4, 1904. The number of subjects examined in was 8; total questions, 80, and percentage required to pass, 75. The total number examined was 6, all of whom passed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Rush	(1904)	84.6
Jefferson	(1900)	80.2
Washington University, St. Louis	(1904)	87.2
Omaha Medical College	(1901)	*75.1
Central Medical College, St. Joe	(1904)	79.8
Northwestern University Medical Department	(1904)	78.1

*Second examination.

Arizona July Report.—Dr. Ancil Martin, secretary of the Board of Medical Examiners of Arizona, reports written examination held at Phoenix, July 4 and 5, 1904. The number of subjects examined in was 9; total questions asked 90, and percentage required to pass 80. The total number examined was 10, of whom 6 passed and 4 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Vanderbilt University	(1885)	80
Queen's University, Ontario	(1883)	87
University of Michigan	(1903)	83, 90
Chicago Homeopathic Medical College	(1901)	80
University of Southern California	(1903)	86

FAILED.		
Michigan College Medicine and Surgery, Detroit	(1902)	67
Detroit Homeopathic Medical College	(1875)	65
College of Medicine, California	(1882)	52
Toledo Medical College	(1891)	57

Indiana July Report.—Dr. W. T. Gott, secretary of the Indiana Board of Medical Registration and Examination, reports the written examination held at Indianapolis, July 12-14, 1904. The number of subjects examined in was 18; total questions asked, 130; percentage required to pass, 75, no two subjects less than 50 per cent., and no one less than 40 per cent. The total number examined was 118, of whom 105 passed (including one osteopath, with a grade of 76.6) and 13 failed. The following colleges were represented.

PASSED. College.	Year Grad.	Per Cent.
Rush Medical College,	(1897) 87.3, (1902) 88.4, (1903) 79,	(1904) 81.2, 87.6, 92.6.
Hospital College of Medicine, Louisville,	(1891) 75.3, (1903) 77.3,*	(1904) 80.9, 81.7, 83.8, 87.3.
Chicago Homeopathic Medical College,	(1904) 82.2, 82.2,	83.2, 85.1, 84.8.
Homeopathic Med. Coll. of Missouri	(1904)	77.2
Louisville Medical College	(1903) 76.4, (1904) 77.1, 77.2,	86.2

Kentucky University, (1904) the grade of 79.5 was reached by one, 80 by one, 82.6 by one, 83 by four, 84.5 by two.

Medical College of Ohio	(1873) 79.1, (1902)	81.0
Bennett Medical College, Chicago	(1902)	88.8
University of Louisville,	(1894) 82.2, (1904) 81.4, 82.2, 84.2,	85.5, 85.6, 87.2, 90.3.
American Coll. of Med. and Surg., Chicago	(1904)	88.0
Washington University	(1903) 84.6, (1904)	85.0
Fort Wayne College of Medicine	(1904)	87.6
Physio-Medical College of Indiana	(1904) 78.4, 80.8,	80.9

Medical College of Indiana, (1904) the grade of 83 was reached by two, 84.5 by three, 85.1 by three, 85.8 by one, 86.5 by three, 87 by one.

Univ. and Bellevue Hosp. Med. Coll.	(1903)	83.7
Northwestern University	(1904)	79.5
Kentucky School of Medicine,	(1902) 83.1,† (1903) 80.2, (1904) the grade of 84.4 was reached by three, 82, 85 and 87 were each reached by one.	
Harvey Medical College, Chicago	(1902)	89.2
Illinois Medical College, Chicago	(1902)	80.0
University of Michigan	(1902) 89.8,	(1904) 91.2
University of Illinois	(1903) 88.6,	(1904) 83.5, 84.3
Jefferson Medical College	(1904) 83.6, 85.9, 86.1,	88.3
Hering Medical College, Chicago	(1904)	86.2
Eclectic Medical Institute	(1903) 81.6,**	(1904) 80.5, 77.0
Medico-Chirurgical College	(1902)	85.1
College of P. and S., Keokuk	(1887)	**82.2
Dunham Medical College, Chicago	(1902)	87.9
Central College of P. and S., Indianapolis,	(1904) 86.2, 88.3,	86.8, 81.8, 87.5, 85.3, 84.5, 88.7.
Ohio Medical University	(1903)	81.8
Barnes Medical College	(1904)	86.3
Columbia University, New York	(1898)	85.2
St. Louis College of P. and S.	(1904)	78.0
Hahnemann Medical Coll., Chicago	(1897) 83.5, (1904)	84.6

FAILED.		
Eclectic Medical Institute	(1903)	*78.0
Medical College of Indiana	(1904)	67.9, 70.6

Jefferson Medical College, (1904) paper incomplete.
Rush Medical College, (1904) paper incomplete.

Homeopathic College, Missouri	(1904)	61.0
Hospital College of Medicine	(1904) 50.3, 63.5,	69.6, 76
Kentucky University	(1904) 71.9,	78.5
University of Louisville	(1904)	73.4

*Second examination. **Third examination. †Fourth examination.

The general average of all representatives of Kentucky University who passed was 82.8; of the university of Louisville, 84.5; of the Central College of Physicians and Surgeons of Indianapolis, 86.1; of Kentucky School of Medicine, 83.5; of the Medical College of Indiana, 85.2.

Kansas July Report.—Dr. G. F. Johnston, secretary of the Kansas State Board of Medical Registration and Examination, reports the written examination at Topeka, July 12-14. The number of subjects examined in was 9; total number of questions asked 90; percentage required to pass, 75. The total number examined was 29, all of whom passed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
Hering Medical College, Chicago	(1904)	85, 88
Kansas City Med. Coll., Kansas City, Mo.	(1904)	78, 78, 83
Eclectic Med. Univ., Kansas City, Mo.	(1904)	75
Lincoln Med. Coll., Omaha, Neb.	(1904)	84
University of Illinois	(1904)	78, 79
Rush Medical College	(1903) 97, (1904)	87, 90
Medico-Chirurgical Coll., Kansas City, Mo.	(1904)	86, 84, 87
Hahnemann Med. Coll., Kansas City, Mo.	(1904)	85, 88
Univ. Med. Coll., Kansas City, Mo.	(1904)	94, 83
Barnes Med. Coll., St. Louis	(1904)	89
Jefferson Med. Coll., Philadelphia	(1904)	93
Louisville Med. Coll., Louisville, Ky.	(1904)	84, 92
Homeopathic Med. Coll., Chicago	(1904)	98
Kansas Med. Coll., Topeka	(1904)	90
Univ. of Heidelberg, Germany	(1880)	79
Central Med. Coll., St. Joseph, Mo.	(1904)	82
Northwestern University, Chicago	(1904)	82
Memphis Hosp. Med. Coll., Memphis	(1886)	76

Utah July Report.—Dr. R. W. Fisher, secretary of the Utah State Medical Examining Board, reports the written examination held at Salt Lake City, July 11-12. The number of subjects examined in was 20; total questions asked, 125; and the percentage required to pass was 75. The total number examined was 14, of whom 12 passed and 2 failed. The following colleges were represented:

PASSED. College.	Year Grad.	Per Cent.
University Med. Coll., Kansas City	(1896)	81
University of Michigan	(1903) 81,	(1904) 81
Rush Med. Coll., Chicago	(1894)	76
Coll. of P. and S., Baltimore	(1904)	90, 83, 82
Denver and Gross Med. Coll., Denver	(1903)	83
Med. Coll. of Ohio, Cincinnati	(1902)	89
Jefferson Med. Coll., Philadelphia	(1904)	87
University of Denver	(1903)	83
Barnes Medical College, St. Louis	(1903)	86

FAILED.		
Marion Sims College, St. Louis	(1904)	74
College of P. and S., Baltimore	(1904)	73

The Public Service.

Army Changes.

Memorandum of changes of station and duties of medical officers, U. S. Army, week ending Aug. 27, 1904:

Whitcomb, C. C., asst.-surgeon, granted one month and fourteen days leave.

Baker, Frank C., asst.-surgeon, left Ord Barracks, Cal., en route to Fort Sheridan, Ill., to take part in Army infantry competition.

Appel, Daniel M., surgeon, reports on thirty days' leave from date.

Owen, Wm. O., surgeon, reported at U. S. Army General Hospital, Presidio of San Francisco, for treatment and observation, from sick leave.

Raymond, Thos. U., surgeon, detailed to represent medical department of the Army at meeting of the American Roentgen Ray Society, to be held at St. Louis, Sept. 9 to 13, 1904, is revoked.

Reno, Wm. W., asst.-surgeon, now on duty at St. Louis, is detailed to represent the medical department of the Army at the meeting of the American Electro-Therapeutic Association, to be held in that city, Sept. 13 to 16, 1904.

Johnson, R. W., surgeon, now on duty at St. Louis, is detailed to represent the medical department of the Army at meeting of the American Roentgen Ray Society, in that city, Sept. 9 to 13, 1904.

Devereux, J. R., asst.-surgeon, left Fort Meade, S. D., on ten days' leave of absence.

Bantlet, C. J., asst.-surgeon, assigned to duty at the Army and Navy General Hospital, Hot Springs, Ark.

Raymond, Thos. U., surgeon, order relieving him from duty at Louisiana Purchase Exposition, St. Louis, and assigned to duty at Fort Assiniboine, Mont., is revoked.

Marrow, Charles E., asst.-surgeon, assignment to duty at Manassas, Va., during maneuvers is revoked.

Baker, Frank C., asst.-surgeon, assigned to duty at Manassas, Va., during maneuvers.

Banister, Wm. R., surgeon, left Jefferson Barracks, Mo., en route to San Francisco with recruits.

McCulloch, C. C., asst.-surgeon, will take charge of the office of the chief surgeon, Department of the East, during the absence of Major John L. Phillips, surgeon at the maneuvers at Manassas, Va., acting chief surgeon.

Noble, R. E., asst.-surgeon, granted fourteen days' leave of absence.

Mabry, William C., contract surgeon, arrived at the camp of the organized militia of Ohio at Athens for duty.

Hussey, Samuel W., contract dental surgeon, granted leave of absence for two months from Fort Snelling, Minn.

Ware, William H., contract dental surgeon, granted leave of absence for two months before going to duty at Fort Logan, Colo.

Woods, Oscar W., contract surgeon, granted leave of absence for two months from Vancouver Barracks, Wash.

Brooks, John D., contract surgeon, left Fort Meade, S. D., August 19 and arrived at Fort Crook, Neb., August 21 for temporary duty.

Greenberg, Harry, contract surgeon, granted leave of absence for one month.

Griffith, Lewis T., contract surgeon, ordered from Troy, N. Y., to Manassas, Va., for duty during the maneuvers.

Voorhies, Hugh G., contract dental surgeon, granted an extension of one month to his leave of absence.

Navy Changes.

Changes in the medical corps, U. S. Navy, for the week ending Aug. 27, 1904:

Kennedy, R. M., surgeon, detached from Naval Hospital, New York, and granted sick leave for one month.

Huntington, E. O., surgeon, detached from Naval Hospital, Portsmouth, N. H., and ordered to duty at the Naval and Marine Recruiting stations, Chicago, August 24.

Bralsted, W. C., surgeon, detached from the *Relief* and ordered to the *Pensacola*.

Guthrie, J. A., P. A. surgeon, granted an extension of leave for three months.

Wilson, H. D., P. A. surgeon, ordered to duty at the Naval Hospital, Portsmouth, N. H.

Wise, A. H., A. A. surgeon, detached from the Naval and Marine Recruiting Stations, Chicago, and ordered to duty with Naval Recruiting Party No. 1, August 25.

Duncan, G. F., A. A. surgeon, detached from the *Franklin* and ordered to duty with Naval Recruiting Party No. 3.

Dabney, V., A. A. surgeon, ordered to duty with Naval Recruiting Party No. 2.

Lewis, D. O., medical inspector, commissioned a medical inspector from Jan. 4, 1904.

Wheeler, L. H., asst.-surgeon, detached from duty at the Naval Hospital, Boston, and ordered to duty as recorder, Naval and Medical Examining Board, Washington, D. C.

Marine-Hospital Service.

Official list of the changes of station and duties of commissioned and non-commissioned officers of the Public Health and Marine Hospital Service, for the thirteen days ended Aug. 24, 1904:

Purviance, Geo., asst.-surgeon general, granted extension of leave of absence for one month from Aug. 1, 1904, on account of sickness.

Williams, L. L., asst.-surgeon general, relieved from status of "absent on leave" and directed to assume temporary command of the Cape Fear Quarantine Station during the absence on leave of Asst.-surgeon B. S. Warren. On the return of Asst.-surgeon Warren to resume status "absent on leave."

Williams, L. L., asst.-surgeon general, granted extension of leave of absence for fifteen days from August 18 on account of sickness.

Ballhache, P. H., surgeon, granted leave of absence for seven days from Aug. 14, 1904, under the provisions of Paragraph 191 of the Regulations.

Foster, M. H., P. A. surgeon, granted leave of absence on account of sickness for one month from Aug. 18, 1904.

Fox, Carroll, asst.-surgeon, granted leave of absence for three days under the provisions of Paragraph 191 of the Regulations.

Schereschewsky, J. W., asst.-surgeon, to proceed to Philadelphia, Pa., for temporary duty in connection with the inspection of alien immigrants during the absence on leave of P. A. Surgeon Tallaferro Clark.

Francis, Edward, asst.-surgeon, granted leave of absence for seven days from Aug. 8, 1904, under the provisions of Paragraph 191 of the Regulations.

Francis, Edward, asst.-surgeon, granted extension of leave of absence for twenty-one days.

Warren, B. S., asst.-surgeon, granted leave of absence for six days.

Hunt, Reid, chief division of pharmacology, granted leave of absence for six days from Aug. 22, 1904, under the provisions of Paragraph 210 of the Regulations.

Walkley, W. S., A. A. surgeon, granted leave of absence for three days.

Hallett, E. B., A. A. surgeon, granted leave of absence for four days.

Bean, L. C., A. A. surgeon, granted leave of absence for five days from Aug. 22, 1904.

Lumsden, T. A., A. A. surgeon, granted leave of absence for fifteen days from Aug. 26, 1904.

Grace, J. J., A. A. surgeon, granted leave of absence for thirty days from Sept. 23, 1904.

Roehrig, A. M., pharmacist, detailed to represent the service at meeting of American Pharmaceutical Association at Kansas City, Mo., Sept. 5 to 10, 1904.

Brock, G. H., pharmacist, relieved from duty at Delaware Breakwater Quarantine and directed to proceed to St. Louis, Mo., and report to medical officer in command for temporary duty.

Gibson, R. H., pharmacist, granted leave of absence for thirty days from Sept. 7, 1904.

O'Gorman, T. V., pharmacist, granted leave of absence for thirty days from Aug. 18, 1904.

Miller, Charles, pharmacist, detailed to represent the service at meeting of American Pharmaceutical Association at Kansas City, Mo., Sept. 5 to 10, 1904.

Kolb, W. W., pharmacist, relieved from duty at the Savannah (Ga.) Quarantine Station and directed to proceed to Washington, D. C., and report at the Bureau preliminary to assignment to duty in the Hygienic Laboratory.

Rogers, Edward, pharmacist, relieved from duty at Cleveland, Ohio, and directed to proceed to New York, N. Y. (Stapleton), and report to the medical officer in command at that port for duty and assignment to quarters.

Mason, M. R., pharmacist, granted leave of absence for fifteen days from Sept. 1, 1904.

Southard, F. A., pharmacist, granted leave of absence for four days from Aug. 8, 1904, under the provisions of Paragraph 210 of the Regulations.

Southard, F. A., pharmacist, relieved from duty in the Hygienic Laboratory, Washington, D. C., and directed to proceed to Cleveland Ohio, and report to the medical officer in command at that port for duty and assignment to quarters.

Spangler, L. C., pharmacist, relieved from duty at the Tampa Bay (Fla.) Quarantine and directed to proceed to Savannah (Ga.) Quarantine and report to the A. A. surgeon in charge for duty and assignment to quarters.

Van Ness, G. I., Jr., pharmacist, relieved from duty at New York (Stapleton) and directed to proceed to Louisville, Ky., and report to the medical officer in command at that port for duty and assignment to quarters.

BOARDS CONVENED.

Board convened to meet at Washington, D. C., Aug. 25, 1904, for N. Y., Aug. 13, 1904, for the physical examination of a chief engineer of the Revenue-Cutter Service. Detail for the board: P. A. Surgeon A. C. Smith, chairman; P. A. Surgeon C. H. Lavinder, recorder.

Board convened to meet at Washington, D. C., Aug. 25, 1904, for the physical examination of a candidate for appointment in the Revenue-Cutter Service. Detail for the board: Asst.-Surgeon-General W. J. Pettus, chairman; Asst.-Surgeon A. J. McLaughlin, recorder.

Health Reports.

The following cases of smallpox, yellow fever, cholera and plague have been reported to the Surgeon General, Public Health and Marine-Hospital Service, during the week ended Aug. 26, 1904:

SMALLPOX—UNITED STATES.

Georgia: Macon, Aug. 13-20, 1 case.
Illinois: Chicago, Aug. 13-20, 6 cases.
Louisiana: New Orleans, Aug. 13-20, 2 cases, traced to importation.
Michigan: Grand Rapids, Aug. 13-24, 1 case.
Missouri: St. Louis, Aug. 13-20, 2 cases, 1 death.
Pennsylvania: Philadelphia, Aug. 13-20, 1 case.
South Carolina: Charleston, Aug. 13-20, 1 case.
Tennessee: Nashville, Aug. 13-20, 2 cases.

SMALLPOX—INSULAR.

Philippine Islands: Manila, July 2-9, 1 case.

SMALLPOX—FOREIGN.

Africa: Cape Town, July 8-16, 1 death.
China: Shanghai, June 25-July 16, 6 deaths.
France: Paris, July 30-Aug. 6, 12 cases, 1 death.
Great Britain: Glasgow, Aug. 6-12, 9 cases; Leeds, Aug. 6-13, 2 cases; July 30-Aug. 6, London, 2 cases, 1 death; Manchester, 1 death; Newcastle-on-Tyne, 5 cases; Nottingham, July 23-30, 1 case.
India: Bombay, July 19-26, 5 deaths; Calcutta, July 9-16, 1 death.
Italy: Palermo, July 23-Aug. 6, 31 cases, 15 deaths.
Mexico: City of Mexico, July 31-Aug. 7, 3 cases, 1 death.
Russia: July 23-30, Moscow, 13 cases, 2 deaths; St. Petersburg, 5 cases, 1 death; Warsaw, July 8-16, 27 deaths.
Spain: Barcelona, Aug. 1-10, 9 deaths.
Turkey: Constantinople, July 31-Aug. 7, 2 deaths.

YELLOW FEVER.

Ecuador: Guayaquil, July 20-27, 7 deaths.
Mexico: Aug. 6-13, Coatzacoalcos, 2 cases, 1 death; Vera Cruz, 5 cases, 1 death; July 31-Aug. 13, Merida, 2 cases, 2 deaths; Tehuantepec, 5 cases, 4 deaths.

CHOLERA.

India: Bombay, July 19-26, 1 death; Calcutta, July 9-16, 7 deaths.

PLAGUE—INSULAR.

Hawaii: Hilo, Aug. 19, 1 death.
Philippine Islands: Manila, July 2-9, 1 case, 1 death.

PLAGUE—FOREIGN.

Africa: Cape Colony, July 9-16, 1 case.
Brazil: Bahia, June 16-July 24, 24 cases, 10 deaths.

Egypt: July 16-23, 16 cases, 8 deaths.
India: Bombay, July 19-26, 57 deaths; Calcutta, July 9-16, 5 deaths.
Mauritius: May 6 June 16, 8 cases, 7 deaths.
Peru: Lima, July 16-30, 15 cases, 7 deaths.

Society Proceedings.

COMING MEETINGS.

AMERICAN MEDICAL ASSOCIATION, Portland, Ore., July 11-14, 1905.

Rocky Mountain Interstate Medical Association, Denver, September 6-7.
American Roentgen Ray Society, St. Louis, September 9-13.
American Association of Obstetricians and Gynecologists, St. Louis, September 13-15.
American Electro-Therapeutic Ass'n, St. Louis, September 13-16.
International Congress of Arts and Science, Department of Medicine, at Universal Exposition, St. Louis, September 19-25.
Medical Society of the State of Pennsylvania, Pittsburg, September 27-29.
Colorado State Medical Society, Denver, October 4-6.
Idaho State Medical Society, Lewiston, October, 6-7.
Tri-State Medical Society of Alabama, Georgia and Tennessee, Chattanooga, October 12-14.
Assn. of Military Surgeons of the U. S., St. Louis, October 10-15.
Mississippi Valley Medical Association, Cincinnati, October 11-13.
Vermont State Medical Society, Rutland, October 13-14.
New York State Medical Association, New York, October 17-20.
Medical Society of Virginia, Richmond, October 18-21.

BRITISH MEDICAL ASSOCIATION.

Seventy-second Annual Meeting, held at Oxford, July 26-30, 1904.

(*Continued from page 635.*)

Total Enucleation of the Prostate.

In this paper Mr. P. J. Freyer described his results in his 110 cases of suprapubic prostatectomy, the patients varying in age from 53 to 84 and the prostates weighing from ¾ of an ounce to 14¼ ounces. The majority of the patients had been dependent on the catheter for periods varying up to 24 years. Nearly all were in broken health and many were apparently moribund and few were free from complication. In three cases the disease was malignant. One died twenty days after the operation, when the wound was practically healed. The other two made fairly good recoveries. Excluding these three cases there were 107 cases of complete removal of the adenomatous prostate, of which 97 were completely successful, the power of retaining and passing urine without the aid of the catheter being regained. In only two cases did septicemia follow operation, and this Mr. Freyer ascribed to an immunity acquired by the patients from long absorption of septic urine. There were ten deaths, two from mania after the wounds had practically healed, one from heat stroke on the tenth day, when the patient was practically convalescent, one from coma due to absorption of toxins from the urine, which had set in several days before operation; one from pneumonia seven days after operation, one from heart failure six hours after operation, one from heart failure, one from interstitial nephritis, and two from septicemia. In only four or five cases could the deaths be ascribed to the operation. But accepting all the deaths, the mortality is only 9 per cent.—about one-fourth of the mortality from lithotomy at the same ages. Mr. Freyer claimed that his operation gave results far superior to those attained by any other method of treatment.

Pseudo-Malarial Fevers.

The Section in Tropical Medicine was undoubtedly one of the most important and well reflected the recent great progress in the knowledge of tropical diseases. The President, Dr. Alexander Crombie, delivered an opening address on "The Fallacy of Finality." He pointed out that while clinicians believe in the existence in hot climates of fevers of a continued type other than typhoid and malarial, bacteriologists do not. Notwithstanding the official returns, which show an overwhelming majority of admissions for malarial fevers, he believed that "ague" is not the most prevalent type of fever in India. The commonest type is what he has called "single-paroxysm fever." The paroxysm may be of a few hours or few days' duration, but it is a single paroxysm and has no tendency to recur. If it lasts a few hours it is called "ephemeral fever"; if a day or two, "febricula"; if several days, "simple continued fever." These attacks give no clinical evidence of periodicity such as would be caused by the life cycles of a parasite in the blood, and recovery takes place without administration of quinin. He spoke of a form of fever which he called "non-malarial remittent." This is a fever of considerable severity, duration and mortality, lasting on an average six weeks, if not fatal earlier. Dr. Crombie never found malarial parasites in it and quinin pushed to doses of 90 gr. daily was not only ineffectual but harmful. The refusal to recognize such facts by other investigators he attributed to the "fallacy of finality"—the fallacy that every advance is final and that every fact in medicine must be brought into line with it because there is nothing beyond.

Infectious Jaundice.

DR. SANDWITH, Cairo, Egypt, defined this disease as an acute infectious disease sometimes epidemic during the summer months, characterized by fever jaundice, enlarged liver and spleen, nephritis and some nervous symptoms. It is not contagious. In Smyrna it apparently has been endemic since 1837, and in Alexandria certainly since 1870. Professor Weil of Heidelberg has published four cases and since then several others have been recorded in Germany. There have been small epidemics in England, the United States and China. Men chiefly between the ages of 20 and 30 are most affected, and during the summer months. No microbe has been discovered, but analogy points to the fact that it is insect borne. The symptoms may be divided into three stages: 1, primary fever, lasting from three to five days; 2, jaundice of from seven to nine days' duration; 3, secondary fever, for from seven to nine days. After an incubation period of one or two days there is usually a sudden onset with a distinct rigor, the temperature rising to between 102 and 104 degrees, with general malaise and vomiting. About the third or fourth day the jaundice begins with enlargement and tenderness of the liver, enlargement of the spleen and albuminuria, after which the fever usually subsides. The jaundice and other symptoms then gradually disappear, but in about three-fourths of the cases there is a secondary attack of fever and convalescence is always slow. The nervous symptoms are headache, giddiness and sleeplessness. In bad cases there are somnolence, prostration, hiccough, lividity, dry brown tongue and muscular twitchings. Muscular pains, especially at the nape of the neck and in the calves, are intense during the first stage and are increased by pressure, forming a useful diagnostic sign. There is usually epigastric pain, which can be traced to the liver. Constipation is the rule, but in severe cases there may be diarrhea. During the jaundice the stools are clay-colored. Hemorrhages from the mucous membranes, especially epistaxis, may occur. The urine contains albumin and bile. The mortality in Alexandria is 32 per cent. Postmortem fatty degeneration of the liver and petechiæ on the serous and mucous membranes are found.

Leishmann-Donovan Bodies.

MAJOR W. B. LEISHMANN read a most important paper on "The Leishmann-Donovan Body." Since these bodies were first brought to light many cases in which they have been observed have been recorded, and it is becoming more and more evident that the disease associated with their presence is by no means uncommon in the tropics. Originally found in the spleen, they have since been found in the liver, mesenteric glands, bone marrow, kidneys, and ulcers involving the intestinal mucosa. The parasites appear to be intra-cellular and are found in large mononuclear cells which are probably macrophages. In specimens obtained during life by splenic or hepatic puncture the parasites are usually found free in groups. The principal symptoms noticed are: 1, Splenic and hepatic enlargement; 2, a peculiar earthy pallor of the skin and in the late stages great emaciation and muscular atrophy; 3, prolonged irregularly remittent fever lasting frequently many months, with or without remissions; 4, hemorrhages such as epistaxis, bleeding from the gums, subcutaneous hemorrhages or purpuric

eruptions; 5, transitory edema of the legs; 6, complications such as congestion of the lungs, diarrhea and dysentery have been frequently reported and occasionally cause death; 7, a marked mononuclear increase—an interesting point in view of the proved absence of malaria. The disease is resistant to medication, especially to quinin, at all events in the later stages. The symptoms are similar to those of kala-azar, but it is too early to say whether the two diseases are identical. The bodies appear to represent a stage in the life history of a flagellate organism resembling a trypanosome, if not belonging to that genus. Recently Captain Rogers has announced in the *Lancet* that trypanosomes have developed in cultures of these bodies.

The Museum.

A most interesting feature of the meeting was the museum, which contained a large number of remarkable exhibits, including radiographs and photographs illustrating diseases of the prostate and diseases and injuries of bones and joints; particularly Colles' fracture and congenital dislocation of the hip. Microscopic preparations showed the most recent work in the pathology of new growths. A beautiful series of ophthalmologic and otologic drawings by Dr. Ole Bull of Christiania was lent by the University of Cambridge. A striking exhibit was a lifesize wax figure showing the injuries inflicted on the body and clothing by a lightning stroke.

Senility and Infantilism.

Mr. Hastings Gilford illustrated some anomalies of growth recently described by him, which he terms "ateleiosis" and "progeria," by four living specimens and a number of photographs. These two disorders are of opposite natures. Ateleiosis is a form of infantilism, while progeria is a form of senility. Ateleiosis seems to be of two varieties, asexual and sexual. The asexual case shown was a man of 30, but had the height, rounded figure, physiognomy and ossification of a boy of between 5 and 10, some parts being more backward than others. The genital organs were like those of an infant. He is still growing at the rate of about 5 cm. a year. The sexual case shown was a man of 38, whose height and proportions were those of a boy of 10, while he also possessed the flat, undeveloped face of a boy. But he was sexually mature and had a family of seven, three of whom were dwarfs. One of these, a boy of 12, was shown because he served as a connecting link between the two varieties, for while he was the son of a sexual ateleiosis, he himself was an instance of the asexual variety, for he was cryptorchid and his genitals were infantile. Progeria was represented only by photographs, all three of the subjects being dead. All three presented the external and internal signs of old age. One died from apparent senile decay at 17, another at 18, and the third, a less marked case, at 43.

Therapeutics.

[Our readers are invited to send favorite prescriptions or outlines of treatment, such as have been tried and found useful, for publication in these columns. The writer's name must be attached, but it will be published or omitted as he may prefer. It is the aim of this department to aid the general practitioner by giving practical prescriptions and, in brief, methods of treatment for the diseases seen especially in everyday practice. Proper inquiries concerning general formulae and outlines of treatment are answered in these columns without allusion to inquirer.]

Myocarditis.

Stevens, in *Amer. Med.*, discusses the diagnosis and gives the following outline of treatment of myocardial disease:

GENERAL TREATMENT.

"Attention to the minutiæ of life is of the utmost importance. Each individual must be studied as regards the state of the arteries, the character of the pulse, the digestive powers, the existence or absence of any constitutional vice, and the actual condition of the heart, so far as this can be determined." Attention should be directed to proper exercise. It is many times unnecessary for the patient to give up his occupation, but the sum of his exertions should in no wise fatigue the heart. Fret and worry frequently have as baneful an effect on the heart as actual physical exertion. Graduated exercise is indicated except in those cases where it is followed by palpitation, irregularity, pain, or pronounced dyspnea, in which cases absolute rest should be prescribed. In these cases massage is useful since it gives the patient exercise without any additional strain on the heart.

DIET.

Avoid rich foods, bulky foods, and foods which induce flatulence. Prohibit eating between meals. Over-eating and copious drinking at meal time must be avoided. Water may be allowed between meals freely enough to secure free elimination of waste products. Tea and coffee should be used very sparingly, better not at all. Alcohol and tobacco should be dispensed with. Avoid all excesses. Avoid constipation. Gouty diathesis and syphilis should receive appropriate treatment.

SPECIAL TREATMENT.

He recommends strychnin in doses of 1/60 gr. to 1/30 gr. (1 mg. to 2 mg.) two or three times a day. If anemia is present iron and arsenic can be advantageously combined with strychnin. The nitrites and iodids are of especial value when there are angioid pains, high arterial tension, and cardiac asthma. The iodids are contraindicated where there is advanced arterial disease and chronic nephritis. Digitalis must be used tentatively, in small doses and best when the degeneration is in its early stages. It is well to guard against its constricting influence on the arterioles by combining with either nitroglycerin or sodium nitrite. In some cases strophanthus is more efficacious than the digitalis and in others caffein, spartein or cactus may be tried.

A Non-toxic Preparation of Iodin.

Wingrave, in the *Lancet*, states that after considerable experimentation with different preparations of iodin he has found the following formula can be given for considerable periods without causing symptoms of iodism while exercising its specific effects on lymphatic enlargements:

B.	Iodin ..... gr. xl	2	65
	Acidi tannici 3i	4	
	Alcoholis (90 per cent.) 3ixss	38	
	Syrupi q. s. ad 3xix	76	

The iodin is dissolved in the alcohol, the tannic acid and 30 c.c. of syrup are added, the solution is heated to just below the boiling point until it affords no evidence of free iodin with the starch reaction (about 20 minutes), then cooled and the remainder of the syrup is added with flavorings. Each dram contains two grains of iodin. Dose from one-half dram to two drams in water or wine before meals, according to age. The iodin is in loose chemical combination with the tannic acid, and is readily given up to the tissues after absorption, and consequently there is no chance of any local intestinal or gastric irritation. The author has found that children tolerate it well, and it has proved of value in cases of chronic lymphadenitis, associated with or independent of, enlarged tonsils and adenoids, especially when the enlarged glands persist after tonsillotomy. It is further indicated in those cases of enlarged faucial and pharyngeal tonsils where operation is contraindicated or objected to. It has afforded gratifying results in atrophic rhinitis, especially when combined with arsenic.

Enuresis.

Lewis, in the *British Jour. of Children's Diseases*, states that he has observed that children fed on starchy foods pass a larger amount of urine than normal, and when their starchy food is cut off this symptom disappears. It is the same with victims of enuresis. In most cases a rigid antidiabetic diet removes the symptoms in a few days. During the cure, starchy foods may usually be allowed for breakfast without "accidents" occurring at night. As to results the author states: "Without any other treatment hospital cases are relieved at once, and

finally cured when fed on the ordinary hospital diet. In private cases small quantities of bread or cake given at dinner or tea will cause bed wettings to recur."

Simple Diarrhea.

Earp, in the *Med. Council*, discusses the therapeutics of this common condition, and believes that rational curative therapy depends on four cardinal factors: 1. Cleanse the alimentary canal of all offensive material and relieve pain. 2. Antisepsis. 3. Establishment of rational dietetic measures. 4. Rest in bed.

PROPHYLACTIC MEASURES.

The author states that perhaps there is no disease which holds a closer relationship to errors of diet than this one. If the following rules could be more carefully observed many cases of diarrhea would be averted. Take food in moderate amounts, eat slowly, thoroughly masticate the food, and thus give due regard for the first process of digestion, let the mind be free from care or anxiety during the meal and rest a few minutes before and after.

Care must be taken to make a proper selection of food, for the reason that decomposed material, fermented products and and impure water may produce a catarrhal condition, followed by diarrhea.

TREATMENT.

Cleansing the Intestinal Canal.—When portions of undigested food are found in the stools it is but reasonable to suppose that others remain in the canal, giving sufficient indication for the administration of salines to free the alimentary tract of all offending material. (It is also recommended to give a liberal dose of castor oil, to which a small dose of tincture of opium may be added, if much pain is present, to accomplish the same purpose as the saline.) During the time of cleansing the canal it is important that very little should be given in the way of diet, and that a light diet should be continued until all symptoms have disappeared. In all cases of diarrhea there is always bodily exhaustion, and likewise impairment of the digestive function. Therefore, predigested foods or foods easily digested must be used with or without any of the drugs known as digestants. Food should be chosen which can in the main be digested in the stomach and leave as little residue as possible. Opium should only be given if necessary for the pain, and then sparingly.

Of the astringent and antiseptic drugs the author recommends the sulfocarbolate of zinc, or salicylate of bismuth, and also guaiacol benzoate. Under no circumstances should the bowels be locked up or permitted to be inactive any length of time.

During the early stages rest in bed is of prime importance.

Dysmenorrhea.

Hammond, in *Amer. Med.*, states that the action of gelsemium in the treatment of dysmenorrhea in patients in which repeated careful examination of the pelvic organs fail to show any abnormalities or pathologic lesions, has been very satisfactory. Ten drops of the tincture should be taken three times daily, begun each month seven to ten days previous to the beginning of the flow. In a large proportion of cases this plan of treatment will afford absolute and marked relief.

Infantile Convulsions.

Merck's Archives recommends the following:

R.	Potassii bromidi Sodii bromidi Ammonii bromidi Calcii bromidi, āā	gr. xv	1
	Tr. belladonnæ	m. vi	3
	Syrupi aurantii floris q. s. ad	ʒiii	90

M. Sig.: One to four teaspoonfuls, according to age, every two hours.

If indigestible food has been taken give an emetic and a purgative. A hot bath is a valuable adjuvant.

Chorea.

Chapman, in the *Brooklyn Med. Jour.*, concludes there is but one drug which has met with any success in the treatment of this disease, and that is arsenic. Of the preparations of this drug Fowler's solution has given the most universal satisfaction. Some cases tolerate Pearson's or Donovan's solution better. Fowler's solution is best administered, beginning with small doses and gradually increasing up to the point of tolerance. Some observers say up to the full physiologic effect, but the author considers this not only unnecessary but believes that the damage done to the digestive organs is certainly detrimental to the patient's general condition, which is a point that should receive our first attention. He also discountenances the use of the drug hypodermically, and believes the pain and annoyance from the injection greater than the good accomplished.

It is best to give Fowler's solution well diluted to prevent gastric irritation and likewise to increase the amount of liquids ingested The increased fluids prevent the extreme concentration of the urine and lessens the irritation of the kidneys. Medicinal diuretics are seldom necessary, and when indicated small doses of acetate of potash may be dissolved in milk and administered without the patient's knowledge.

The anemia is best treated by some preparation of iron given in small doses and well diluted. The author prefers the citrate of iron and quinin dissolved in sherry wine. If the digestion is good and the stomach will tolerate it, the syrup of the iodid of iron with the compound syrup of the hypophosphates makes an excellent combination.

For insomnia and much restlessness he recommends the use of chloral hydrate. This drug is well borne by children, and from five to ten grains in a cup of hot milk usually induces a good night's sleep.

Coexisting disorders, such as malaria, rheumatism, etc., should receive appropriate treatment. Quinin and the salicylates are well borne by choreic patients. Any source of reflex irritation, such as adenoids, phimosis, etc., may receive palliative treatment, but surgical procedures should be avoided until the choreic symptoms have subsided.

The following is recommended for chorea in rheumatic patients:

R.	Sodii salicylatis	ʒii	8
	Potass. iodidi	ʒi	4
	Pepsini (scale)	ʒii	8
	Syrupi sarsaparillæ comp.	ʒi	30
	Aquæ dest. q. s. ad	ʒiii	90

M. Sig.: Teaspoonful in water three times a day.

Olive Oil in Affections of the Stomach.

It is to be noted that olive oil is occupying a more useful and frequent place in practical therapeutics and we have read with interest the abstract of Cohnheim's article in the *Zeitschrift f. klin. Med.*, in which he tells of another use of this drug and claims excellent results. "Cases of gastric dilatation which are due not to organic obstruction, but to pyloric spasm secondary to an ulcer, fissure, or erosion, may be cured or greatly improved by the introduction of large quantities of olive oil through the stomach tube. About 3½ to 5¼ ounces (100 to 150 c.c.) of warm oil are introduced when the stomach is empty. In organic stenosis, and at first in spastic cases, previous irrigation of the stomach is required. If, nevertheless, pain recurs later in the day, another 50 c.c. of oil should be given before bedtime."

MODE OF ACTION.

The oil acts mechanically as a lubricant, so that even solids glide through the altered pyloris. Even in extreme pyloric stenosis oil enters the duodenum and is absorbed. It not only acts locally by relieving the pain and spasm, but improves the general condition.

INDICATIONS.

The following conditions have been improved by the use of the oil: Organic pyloric stenosis, with secondary gastrectasis; cases of incomplete pyloric and duodenal stenosis, which are characterized by continuous hypersecretion, and the occurrence of pyloric spasm several hours after meals are also cured or improved. In carcinomatous stenosis the oil prevents or relieves pyloric spasm. In early cases, oil may prevent the

occurrence of secondary gastric dilatation. Or it may be given after the disappearance of the symptoms to prevent relapses. The treatment should be continued for several weeks. Cases of pyloric ulcer, with or without hyperchlorhydria, and with colic-like pain occurring from 1 to 4 hours after food, are cured by olive oil or almond oil emulsion, if there are no complications, such as perigastritis.

METHOD OF ADMINISTRATION.

The oil or emulsion may be given by the tube or drunk a half to one hour before food; the doses are a wineglassful before breakfast, and two tablespoonfuls at mid-day, and in the evening. The almond oil emulsion should be freshly prepared by rubbing up a tablespoonful of sweet almonds in a mortar, pouring a cup full of boiling water over the powder, and passing the mixture through a fine sieve. Sufficient water is added to make about eight ounces of emulsion, which is sweetened and drunk warm about one-half hour before meals. The diet should be regulated and all vegetables given as purées.

Medicolegal.

Evidence of a Hope of Recovery.—The Supreme Court of Louisiana holds, in the homicide case of State vs. Gianfala, that, though the wounded man said he thought he was going to die, yet, if he asked the opinion of a physician, and, on his advice, started on a journey to a distant city to have himself operated on, as being his one chance of recovery, his statements would not be admitted as dying declarations; it not appearing that he was not without some slight hope of recovery.

Right of Physician to Enter Premises to Treat Lodger.—The Supreme Court of Iowa says, in the case of Watson vs. Dilts, that it has no doubt that a boarder and lodger may have an implied license to have a physician enter on the premises in case of illness, so that if one went to the house for the sole purpose of treating such boarder and lodger in a strictly professional capacity he ought not to be held a trespasser. But an implied license to enter the premises of another contemplates an entry only in the usual way, and at a reasonable time.

Use of Sidewalks by Lame and Aged—Care Required.—The Supreme Court of Michigan says, in the personal injury case of Harden vs. City of Jackson, that there is no doubt that the legislature authorized sidewalks for the use of the lame and aged as well as for the able-bodied and young, but we know that the former classes should, and usually do, use greater care than the latter find necessary. A man walking on crutches knows the common method of building sidewalks. He knows that edges of the boards decay and knots drop out, and instinctively he learns to avoid putting his crutches in holes or cracks. The court thinks it is not negligence for a city to use its plank walks, although they have cracks and knot holes through which a cane or crutch would go, acting on the expectation that the traveler must know that they are practically unavoidable, and are common to all sidewalks, long before they are sufficiently worn to justify pulling them up and building anew. The city has a right, in the maintenance of its walks to expect a reasonable degree of care from all persons; and, when its walks are safe for the ordinarily prudent use, there is no negligence. If there were no walks the pedestrian might still fall, and the crutches of the infirm go down in holes made by animals, or in soft places. An accident from such a cause would be a casualty. So, too, there may be casualties on walks. The cities are not insurers of those who walk on sidewalks, and, even though injured without negligence on their part, the same is no more than a casualty, if the walk is as good as such person has a right to expect.

Drunkenness and Delirium Tremens as Defense to Crime.—The Supreme Court of Alabama says, in Parrish vs. State, that while delirium tremens of itself is not necessarily a complete defense, or does not wholly excuse the person who commits a crime while in that condition, yet it may palliate or extenuate the crime and punishment, if the disease, drunkenness, or delirium tremens has gone to such an extent as to deprive the person of the capacity to have entertained the intent necessary to constitute murder. Hence voluntary drunkenness, though not carried to the extent of delirium tremens, may palliate a crime, if a necessary element of the crime is specific intent. In order to constitute murder in the first degree, willfulness, premeditation, and deliberation must concur with malice; and if drunkenness or delirium tremens has gone to such an extent as to paralyze the mental faculties, and to render the accused incapable of forming a design, which is a necessary ingredient of the crime, it would be a pertinent inquiry for the jury in determining the degree of the homicide and of the punishment to be inflicted. And there being some evidence that the accused in this case was suffering from delirium tremens at the time, he had a right to have the jury pass on its credibility and sufficiency, and as to whether it was sufficient to prevent his being capable of forming an intent and of entertaining the necessary malice or intent to constitute murder. Furthermore, on the tendencies of the evidence in this case, it could not be affirmed, as a matter of law, that delirium tremens, even if induced by voluntary drunkenness, would not support the accused's plea of not guilty by reason of insanity. A person suffering under or afflicted with delirium tremens, for the time being, may be as absolutely insane as an idiot or a maniac.

Current Medical Literature.

AMERICAN.

Titles marked with an asterisk (*) are abstracted below.

American Medicine, Philadelphia.

August 20.

1 *Laceration of the Cervix. J. M. Baldy.
2 A Case of Malignant Adenoma of the Liver. George L. Peabody.
3 *Cervical Ribs in Man. D. N. Eisendrath.
4 *The Value of Non operative Local Treatment in Gynecology. Willis E. Ford.
5 The Modern Treatment of Pulmonary Tuberculosis. Frank Warner.
6 Plea for a More Just Judgment of Narcotic Drug Users. George E. Pettey.
7 Open Oral Questions. Wm. S. Lederer.
8 Meteorism in Pneumonia: Its Prognostic Importance. Hellodor Schiller.

1. **Laceration of the Cervix Uteri.**—Baldy protests against the tendency among obstetricians to repair lacerations of the cervix primarily. The objections are enormously swollen lips, so that a proper adjustment of the surfaces is difficult, and the subsequent shrinkage of the tissue under the sutures, which is of such an extent as to be uncontrollable both for purposes of apposition and for the prevention of the invasion of infection between the lacerated surfaces. The effect of an operation on the morale of the patient at such a trying period is by no means the least of the objections. The treatment for recent lacerations of the cervix, says the author, remains rigid local cleanliness, except when there is a sufficient hemorrhage to demand a ligature. When non-infection can be insured, and when the torn lips are not unnecessarily disturbed by the careless use of the nozzle of the syringe, spontaneous healing of these lacerations may be expected to a greater or less degree, and what remains when nature is through with her work will be of a healthy character, will give no future trouble and will need no surgical interference. Stop the active discharges from the uterus, keep the eroded surfaces free from their own discharges and they will soon disappear. Baldy does not concur in the belief that lacerations of the cervix produce carcinoma. In twenty years' work he has not seen a single case of cancer develop in a laceration of the cervix which he refused to repair. Many arguments are brought forward in Baldy's article bearing on the latter proposition, but are too numerous to be abstracted.

3. **Cervical Ribs in Man.**—Eisendrath records a case of cervical rib discovered accidentally in a woman, aged 56, who consulted him with reference to a tumor of the breast. Thirty-

four cases of cervical rib are recorded in the literature. The chief clinical interest of this condition is the relation of the rib to the brachial plexus and to the subclavian vessels. In some cases it may give rise to a pulsating tumor just above the clavicle and be diagnosed as an aneurism. In others the compression of the artery causes thrombosis of the distal portion, with resulting discoloration, coldness or even gangrene of the fingers. Symptoms of pressure on the brachial plexus vary from numbness and tingling in the arm, to severe pains down the arms or in the fingers alone. In some cases electric treatment or elevation of the arm gives relief. In others resection of the cervical rib is necessary.

4.—See abstract in THE JOURNAL, xlii, p. 1585.

Medical News, New York.

August 20.

9 *Technical Errors in the Use of Rubber Gloves. Howard D. Collins.
10 Interstitial Gingivitis or Scorbutus. Eugene S. Talbot.
11 Some Weather Observations in the Adirondacks. L. Brown.
12 The Biological Interpretation of Cancer. Alexander Spingarn.
13 Appendicitis: Pathology and Surgical Treatment. E. N. Lieli.
14 Beginning General Paresis: Its Recognition and Management. Charles Lewis Allen.
15 *The Bacteriology of Panophthalmitis. Richard N. Johnston.
16 Autointoxication of Gastrointestinal Origin. Clifton Mayfield.
17 Bacteriuria, with Special Reference to Coli Bacilluria. Arthur R. Elliott.
18 *The Uses of X-ray in Medicine and Surgery. Russell H. Boggs.

9. **Technical Errors in the Use of Rubber Gloves.**—Collins says that often it is possible during major operations to see gross errors of technic in the manner of using gloves; errors not so much of carelessness, but of lack of instruction and thought on the subject. The manner of putting on the glove is often faulty in that it counteracts the very purpose for which the glove is worn, that of covering up an unsterile object—the hand—with one that is sterile, the glove. The best and most pleasant use of gloves comes from putting them on dry with sterile starch or lycopodium as a lubricant. Collins prepares his gloves in the following way: A wide-mouthed bottle, filled with pulverized starch and provided with a piece of gauze tied over the mouth in a single layer, is sterilized in a live steam sterilizer. At the same time several towels are sterilized by live steam in the usual manner. The gloves are then turned wrong side out, placed in a wire cage and submerged in clean water in the ordinary instrument broiler. Care should be taken that all of the glove is filled with water and the air driven out. Two pair of long dressing forceps or sponge holders should be put into the boiler with the gloves. The gloves are allowed to boil for from five to ten minutes, when they are taken from the cage and allowed to drain hastily. With the sterile forceps the gloves are placed on one of the sterile towels, spread out flat, and another sterile towel laid over them. If all the free water has been allowed to drain from the gloves, a little stroking and patting of the upper towel will thoroughly dry the outer surface (really the inside, for the gloves were turned wrong side out) in a few minutes. The upper towel is then turned back and the gloves, both back and palm, thoroughly dusted with the sterile starch from the bottle. With one pair of forceps the edge of the wristband is lifted and the other pair of forceps introduced into the glove until the blades grasp the web between the middle and ring fingers; by drawing on the interior pair of forceps and turning the cuff over with the other pair, it takes but a moment to reverse the palm or hand portion of the glove. To reverse the fingers, grasp two diametrically opposed points of the edge of the wristband with the two pair of forceps, and twirl the glove two or three times about its transverse axis; this closes the orifice of the glove and imprisons some air in the palm. Lay the glove on a sterile towel, press on the balloon part of the glove with another sterile towel, and the compressed air causes the fingers to be everted with a rush. Dry the outer surfaces with a sterile towel. Place the gloves in a sterile towel with a piece of sterile gauze between the gloves and on top. Fold and pin the towel. They can be kept several weeks without deterioration. To put on the gloves for use, cleanse the hands and dry them on a sterile towel; open the package of gloves, with the gauze pick up a glove and thrust a hand into it. The gloved hand picks up the second glove with the piece of gauze and the other hand is clad. The pieces of gauze prevent contact of any part of the skin with the outer surface of the glove. If an adjusting of the finger-tips is necessary this is not done until both hands have been clothed. This method insures absolute sterility of the gloves, inasmuch as they have not come in contact with any object that was not sterilized.

15. **Bacteriology of Panophthalmitis.**—Johnston confirms the findings of previous investigators that Fraenkel's pneumococcus is the most frequent cause of panophthalmitis. While in some cases a mixed infection of pneumococcus and staphylococcus or streptococcus has been found, the pneumococcus is probably the essential etiologic factor.

18. **The X-Ray in Medicine and Surgery.**—Boggs classifies the cases which are amenable to *x*-ray therapy under four heads: 1. Those cases which respond readily and, as a rule, do not need surgical interference, such as lupus, epithelioma of the face, acne, eczema and tuberculous glands. 2. Those which should be treated for a short time, the mass removed and then continue *x*-ray treatment to prevent recurrence, namely, carcinoma. 3. Those cases of carcinoma which are considered inoperable should be treated to prolong the patient's life and make him more comfortable. 4. Many cases of tuberculosis in the initial stage respond to *x*-ray treatment. But here the *x*-ray should only be considered a useful adjunct.

New York Medical Journal.

August 20.

19 The Management of Genital Sores. E. Wood Ruggles.
20 *The Best Method of Operating to Affect a Radical Cure of Senile Hypertrophy of the Prostate Gland. Orville Horwitz.
21 The Finsen Light Treatment. Rollin H. Stevens.
22 *The Etiology and Treatment of Arteriosclerosis. O. T. Osborne.
23 *Talma's Operation for Cirrhosis of the Liver. L. B. McBrayer.
24 Renal Insufficiency. A. M. Crispin.
25 Surgery Under Difficulties in East Africa. Samuel Gurney.

20. **Senile Hypertrophy of the Prostate Gland.**—Horwitz studied 150 cases with the view of determining the best method of operating for the purpose of effecting a radical cure of senile hypertrophy of the prostate gland, and believes that the following conclusions are justifiable: 1. A routine method is not applicable; every case is a law unto itself. 2. The dangers attendant on daily catheterism are greater than those of a radical operation performed at the onset of the symptoms caused by the obstruction. 3. The proper time to perform a radical operation is reached as soon as it becomes necessary to resort to daily catheterism. 4. The Bottini operation is of great surgical value. It is applicable to a large percentage of cases. In selected cases it is the safest and best method of relieving the obstruction caused by a prostatic hypertrophy. When stone in the bladder is associated with prostatic enlargement litholapaxy may be performed in conjunction with a galvanocautery prostatotomy. 5. A complete prostatectomy is justifiable if performed early, before secondary complications have supervened. The mortality from such operation varies between 5 and 7 per cent. 6. In feeble elderly patients with long standing obstruction and secondary complication the mortality ranges between 15 and 18 per cent. If the bladder is hopelessly disabled suprapubic drainage is the only justifiable operation. 7. In 90 per cent. of all cases the gland can be removed readily by means of a median perineal incision. The perineal operation recommended by Bryson is the operation of choice. 8. A suprapubic prostatectomy is safer if combined with perineal drainage. 9. Partial suprapubic prostatectomy is indicated in cases where a valvelike lobe exists which interferes with urination, or where there is a partial hypertrophy of one of the lobes. A complete suprapubic and perineal prostatectomy combined is wisest where there is enormous hypertrophy of the three lobes, especially when associated with tumor-formation giving rise to a stenosis of the prostatic urethra. 10. Perineal prostatectomy is best suited for those cases where the enlargement of the lateral lobes has a tendency to progress toward the rectum, to obstruct the

urethra, or to project backward into the bladder. 11. Prostatectomy always is attended with more danger than the Bottini operation and convalescence is more prolonged. In suitable cases the latter operation, therefore, is the one of choice.

22. **Etiology and Treatment of Arteriosclerosis.**—Osborne believes that while old age, nervous strain, over-eating, abuse of alcohol, etc., are contributing causes in the production of arteriosclerosis, the essential factor in the etiology of this condition may be traced to some error of secretion of the so-called ductless glands. After studying the glands that furnish secretions modifying blood tension, he throws out the hypothesis that a diminution of the thyroid secretion or an increase of the suprarenal secretion, or vice versa, may be the essential cause of arteriosclerosis. There may be too much suprarenal secretion or too little thyroid secretion at any age, but old age with its normal high arterial tension is probably due to an absence of thyroid secretion and the consequent, at least relative, increase of suprarenal secretion. All the other contributing factors in the production of arteriosclerosis are operative in a similar manner, and any treatment to be successful must aim to diminish the high blood pressure. This can be accomplished by thyroid extract in small doses if we believe there is evidence of diminished thyroid secretion, and it must be remembered that any small dosage of iodids will stimulate the thyroid gland to greater activity and hence the long-known value of this drug in arteriosclerosis. The prohibition of all drugs and agents that have a contracting influence on the blood vessels will be followed by the best result. The great value of rest, especially mental, must not be forgotten. The moderate use of tobacco after thirty years of age may be of benefit to these hypertension cases rather than otherwise. It is a narcotic to the brain, which removes a certain amount of nervous tension, and it is a vasodilator, which in moderate amount will not weaken the heart. In excessive amounts, however, it will precipitate a cardiac insufficiency. In cases of arteriosclerosis without kidney or liver lesion in a patient of sixty years of age or more, it is quite possible that small doses of alcohol, especially at night, may cause sufficient vasodilation to produce some bettering of symptoms, but this same improvement can be obtained by nitroglycerin in small doses, even as little as 1/400 of a grain, three or four times a day. Osborne concludes by throwing out the suggestion that it is possible that in the future one of the suprarenal glands might be removed or its artery tied in gout and arteriosclerosis.

23. **Talma's Operation.**—McBrayer reports a case of cirrhosis of the liver occurring in a male patient aged 57 years, in which he did a Talma's operation, the operation proving successful. Prior to the operation the patient was scarcely able to walk, there was marked ascites, and he was very much emaciated. Now he is up all the time, walks anywhere on a level and up and down stairs, his jaundice has disappeared and he has gained twenty pounds in weight with two pounds of his normal weight. The ascites has not required paracentesis for over three months. The only medical treatment he has had is 15 grains of compound jalap powder, as needed, and 1/30 gr. strychnin nitrate, three times a day.

Medical Record, New York.

August 20.

26 A Possible Cause of High-tension Pulse in Nephritis. W. H. Thomson.
27 *Treatment of Rupture of the Posterior Urethra. Weller Van Hook.
28 Primitive Medicine. E. J. Kempf.
29 *Alcoholism and Drug Habits: Their Pathology and Treatment. K. A. Enlind.

27. **Rupture of the Posterior Urethra.**—The study of the literature of injury of the posterior urethra by external violence, says Van Hook, leads to the unavoidable conclusion that primary operations should be resorted to whenever possible under a technic somewhat as follows: In the lithotomy position, with the grooved staff introduced through the urethra into the perineal tissues, immediate incision is made, beginning a half-inch in front of the rectum and extending forward toward the scrotum an inch to an inch and a half. While the skin may be divided freely, the deep tissues are only to be incised beneath the sound at a point posterior to the bulb of the urethra. The bulb of the urethra may then be drawn forward by means of a blunt hook, and the ends of the urethra must be sought. The distal portion of the urethra is found at once because the sound passes through it. If the finger be passed over the deep surfaces of the wound, smooth mucous membrane may be felt guiding the operator to the proximal end of the tube. With full exposure of the wound surfaces the proximal end of the urethra may be found by probing. In a recent case a large probe must be used, or even a catheter, but if cicatrization has occurred a fine probe or a grooved director must be used. Van Hook's method of palpation, which is original with him, is as follows: By palpation with the volar surface of the finger the urethra can be rolled under the pubic arch as a somewhat flattened cylindrical mass. This mass is fixed by the fingers against the bone, and a longitudinal incision is made through the middle of it. The finger is then introduced into this opening and the slippery mucous membrane can be recognized without difficulty. The method may be carried out without the aid of inspection, if desired. This is an advantage in cases where hemostasis is difficult. When defects of the urethra are great enough to prevent the ends from being approximated without too great tension several alternatives are open for consideration: 1. The method of Ljunggren, which can not, however, be recommended as a routine method. It makes too great demands on the regenerative power of the urethral tissues, increases the period of healing and probably heightens the danger of infection. 2. The parts of the urethra may be loosened from their bed. 3. The method of Ekehorn, an autoplastic operation. The after-treatment of these cases consists in the use of urinary antiseptics, the administration of large quantities of water, free drainage, carried out according to the views of the operator, and the passage of sounds to prevent the contraction of scar tissue. Van Hook believes that the use of a catheter *a demeure* is harmful rather than beneficial. As a rule, if the bladder needs immediate drainage by a tube, it is better to leave a very large catheter or tube in the bladder to pass out of the perineal wound, which is left almost without transverse suture. The use of the permanent catheter in the presence of infected urine often produces a suppurative urethritis that may result in permanent damage to the canal.

29. **Treatment of Alcoholism and Drug Habits.**—The author's treatment consists of thorough elimination and the stimulation of the nervous system by rest, fresh air, exercise and diet. Large doses of strychnin and drugs of a similar class should be avoided, as they have a tendency to aggravate the nerves. Medicines of nerve tissue building properties should be used in large and frequent doses. In case a heart stimulant should be required liberal doses of sparteïn sulphate can be used with perfect safety. His personal experience with the various preparations of ergot has been very unsatisfactory. As a curative agent ergot is a failure; as an aid in restoring the vascular system to a normal condition after the addiction has been cured ergot is of material benefit.

Cincinnati Lancet-Clinic.

August 20.

30 Prescriptions of Fifty Years. Charles T. P. Fennell.
31 Face Blemishes. F. E. Wisecup.
32 Acute Lacunar Tonsillitis. Frank H. Lamb.
33 Couple of Simple Points in the Diagnosis of Enlarged Prostate. C. M. Harpster.

Archives of Ophthalmology, New York.

July.

34 *Empyema of the Frontal Sinus, Orbital Complication Treated by Superheated Steam. David Dennis.
35 Choroidal Hemorrhage Following Cataract Extraction. Alex. Quackenboss.
36 Trachoma Among the Ancient Greeks and Romans. C. V. Fukala.
37 *Extirpation of the Lachrymal Sac After Injection of Paraffin. Frank C. Todd.
38 A New Formation of Elastic Tissue in the Anterior Chamber of the Eye. Alfred Wiener.
39 Hereditary Optic Atrophy. Arnold Knapp.
40 Severe Pseudo-membranous Conjunctivitis in an Infant, Presumably Due to the Influenza Bacillus. Arnold Knapp.
41 *Parinaud's Conjunctivitis. F. H. Verhoeff and G. S. Derby.
42 Fibromyoma of Bulbar Conjunctiva. Kenneth Scott.
43 The Relation Between the Ocular Muscles and Refraction. S. M. Payne.

34. **Empyema of the Frontal Sinus and Superheated Steam.**—Dennis emphasizes the importance of conservative treatment in the orbital complications of empyema of the frontal sinus. Steam is safe, thorough, reaching all points of the sinus. With proper precautions this will leave a minimum amount of disfigurement. The operation is comparatively easy to perform. It is not applicable to cases of necrosis, or where the disease has extended to the brain. It may be used to advantage combined with the radical operation. Any apparatus can be utilized that will insure high temperature. The most available would be one of the forms of steam atomizers used for throwing carbolic acid spray. There should be a pipe leading into a small additional metal chamber to one side of the atomizer, under which a second alcohol lamp is placed, so that the steam may be still further heated and freed from moisture. From this second chamber a rather heavy rubber hose should lead to a small metal pipe. A small silver eustachian catheter answers the purpose very well. This should be passed through a large wooden handle, so that the heat will not burn the fingers of the operator. The tissues around the opening must be protected from the steam, and a paste made of powdered asbestos may be used. This paste is packed around the tissue and is far superior to cold compresses. The rubber pipe should be closed by pressure while taking the tip in and out of the sinus, otherwise the tissues will be burned.

37. **Extirpation of the Lachrymal Sac.**—Todd describes his method of extirpating the lachrymal sac after its injection with paraffin as follows: After the patient has been prepared properly the contents of the sac are pressed out and the sac is thoroughly and repeatedly irrigated with boric acid solution and with argyrol or another antiseptic. By means of a suitable syringe paraffin, at a melting point of 110, is injected through the lower canaliculus into the sac until it is completely filled. This at once hardens and the sac is outlined perfectly. An incision is made in the skin over the sac in its long axis, extending from one-fourth of an inch below the dome down toward the lower extremity of the swelling. The sac is exposed, can be seen easily, and is dissected out by means of a knife, dull instruments and scissors. It should be followed well down into the duct; if it is buttonholed no damage is done, as the paraffin is hard and will not escape. Any necrosed bone found should be curetted and drainage will take place into the nose. The skin is sutured and the canaliculi destroyed by cauterization. By following these directions no large vessels will be cut and the entire incision may be made below the tendo oculi. If the latter is cut it should be sutured. When a general anesthetic is administered the patient's head may be dropped over the end of the table, as in adenoid operations, to allow the hemorrhage to run out of the nostrils and prevent its entrance into the larynx. If cocain is used, some should be injected into the sac previous to the injection of paraffin; and before making the incision the skin is anesthetized by the infiltration method, in which case adrenalin also may be used.

41. **Parinaud's Conjunctivitis.**—The authors add one more case of this disease to those already recorded. The symptoms were typical of the disease as described by Parinaud. All the outgrowths were excised and ichthyol ointment was applied externally to the swollen glands, and liquor potassi arsenitis, minims 8, was administered internally three times a day. After three weeks the process began to retrograde, the vegetations ceased forming, the lid returned to nearly normal size and the glands subsided without showing fluctuation. Three months after the patient was first seen the eye was practically well; there was still a slight degree of ptosis and some induration in front of the ear. The scars resulting from the excisions are visible, but have produced no apparent cicatricial contraction. The authors made a very careful bacteriologic and histologic examination and summarize as follows: The lesion consists essentially of marked cell necrosis in the subconjunctival tissue with extensive infiltration of the latter with lymphoid and phagocytic epitheloid cells. This is accompanied by chronic inflammatory reaction of the deeper tissue leading to the process of organization and the production of new fibrous tissue. The agent which produces the local lesion is non-pyogenic, suppuration, when its does occur, probably being due to a secondary infection. The infection is, in all probability, not due to any of the known micro-organisms. The theory of animal origin is founded on insufficient evidence. The most efficient treatment consists in the early and repeated excision of the polypoid vegetations.

Annals of Surgery, Philadelphia.

August.

44 Observations on the Results in 125 Cases of Sarcoma. Andrew J. McCosh.
45 The Combined Transverse and Longitudinal Incision in Laparotomy. Lewis A. Stimson.
46 *Peptic Ulcer of the Jejunum. A. W. Mayo Robson.
47 *The Treatment of Post-operative Vomiting by Gastric Lavage. Charles S. White.
48 Primary Spasm and Hypertrophy of the Pyloric Sphincter, and Resultant Enormous Dilatation of the Stomach. Michael J. Rebert.
49 Congenital and Infantile Omentocele on Same Side, Separated from Greater Omentum and Peritoneal Cavity. Jacob Frank and Wm. T. Eckley.
50 Unsuspected Lesions in Movable Kidneys Discovered During Nephropexy. Frank E. Taylor.
51 Transverse Ectopy of the Testes. Albert Ashton Berg.
52 Osteomalacia in the Male. Thomas A. Davis and D. J. Davis.
53 Physiological Salt Solutions. Frank S. Mathews.

46. **Peptic Ulcer of the Jejunum.**—Robson reports a case of peptic ulcer occurring in the jejunum three years and four months after gastro-enterostomy, which he treated by performing an enterectomy and Roux' operation. The patient made a complete recovery.

47. **Treatment of Post-Operative Vomiting by Gastric Lavage.**—White's method is based on the etiology of post-operative vomiting, namely, that during anesthesia there is a condition of atony of the stomach walls, together with an exudate of chloroform or ether into the stomach, acting as an irritant, and there is formed in their presence an increased amount of toxic substances. The lavage is performed immediately after the anesthetic is stopped and before the patient leaves the table. The stomach tube required is one of the usual length, size and moderately stiff, one eye in the extreme end, the second half an inch from the end, and the third an inch from the end, but opposite the second. No pump or bulb is necessary and the rubber funnel usually attached should be replaced by one of glass. While the patient is thoroughly under the anesthetic a mouth gag separates the jaws, the head resting on the occiput. The tube is inserted well back against the pharynx and gently pushed down into the esophagus until the end enters the stomach. The occasional esophageal spasm is best overcome by steady gentle pressure. Salt solution or sterile water is poured into the funnel, held about two feet above the patient, until a pint and a half or two pints are used; then the funnel is inverted close to a bucket on the floor at the right of the table, and at the same time the patient's head should be rotated strongly toward the right. This process should be repeated once or twice or until the fluid returns clear. In removing the tube from the mouth it should be pinched tightly until it is withdrawn so the fluid it may contain does not flow back into the mouth. Although this method has not abolished post-operative vomiting, it has lessened it to a very great extent. It is essential that the patient should be well under the anesthetic at the time the tube is inserted. There are three conditions in which this prophylactic treatment is indicated: 1. In cases where there has been insufficient time to prepare the patient properly. 2. In cases where the anesthetic lasts an hour or more. 3. In cases where the patient, previous to operation, has suffered with attacks of nausea and vomiting or chronic gastritis.

Journal of Medical Research, Boston.

August.

54 *Studies on the Tuberculin Reaction. E. L. Trudeau, E. R. Baldwin and H. M. Kinghorn.
55 The Production of Hemolytic Serum by Injecting Animals with Different Constituents of Erythrocytes. P. A. Levene.
56 The Biological Relationship Between Proteids. P. A. Levene.
57 The antihemolytic Action of Some Cells and Tissue Constituents. P. A. Levene and E. R. Baldwin.
58 Action of Pepsin Digestion on Tuberculin. H. M. Kinghorn.

59 Studies on Tuberculous Serums and the Bacteriolysis of Bacillus Tuberculosis. E. R. Baldwin.
60 Antituberculin or Tuberculin—Precipitin Serums. E. R. Baldwin.
61 Differences in Precipitins Produced by Tubercle Bacilli. E. R. Baldwin.
62 Effect of Bacillus Mycoides XIII on Local Tuberculosis. H. M. Kinghorn.
63 The Biochemistry of the Bacillus Tuberculosis. P. A. Levene.

54. **The Tuberculin Reaction.**—The authors have carried on a series of experiments having as their object the better understanding of the nature and specificity of the tuberculin reaction. The subjects for inquiry which prominently suggested themselves were: 1. Can the diagnostic use of tuberculin scatter the disease and produce new tuberculous foci? 2. What relation has healed or eradicated tuberculosis to the reaction? 3. Is the reaction always dependent on the presence of specific tubercle? 4. What relations have the alleged reactions from other substances to the true tuberculin reaction? Is the reaction due to enzymes like trypsin? 5. How long after infection with tuberculosis does reaction-susceptibility begin? 6. What constituent of the tubercle bacillus induces reaction-susceptibility in the animal? The conclusions arrived at in answer to these queries are as follows: 1. In localized corneal tuberculosis of the rabbit's eye no spread of the disease could be observed after the use of tuberculin injections. On the contrary, a favorable absorptive influence was noted on the diseased focus. 2. Extirpation of a tuberculous focus was followed by loss of reaction-susceptibility in the one rabbit where the operation was thorough. 3. No signs of local reactions were found about the capsules containing tubercle bacilli, except when imperfectly sealed. The temperature elevations gave no evidence of susceptibility to tuberculin resulting from the presence of bacilli in the filter capsule. Hence it is evident that either the poison contained in the bacilli was not diffused through the capsules in sufficient amount to produce susceptibility in the surrounding tissue, or, if so diffused, did not remain in store in the tissues, as has been assumed to be true of tubercles containing actual living or dead bacillus. In either case the presence of tubercle bacilli or their substance in the tissues appears necessary to a true tuberculin reaction. Moreover, the nuclein substance of tubercle bacilli will not pass through a filter, and it is known by chemical research to be the most important poison in tubercle bacilli. 4. Temperature and local reactions may occasionally result from the injection of trypsin, pepton and sodium cinnamate, but only when large doses were injected, whose bulk might produce constitutional disturbance and fever. Atropin produced no reaction in moderate doses. Local reactions occurred seldom, and, except in fatal poisoning by pepton, did not bear a close resemblance to the typical tuberculin reaction. It is possible that pepton contains proteid substances chemically similar to tuberculin, the injection of which excites more or less reaction in the tuberculous tissue. The direct action of trypsin on tuberculous abscesses failed to produce reaction, and thus did not favor an enzyme theory of the tuberculin reaction. 5. The temperature variations noted preclude uniform results from tuberculin reactions in the early stages of tuberculosis. The reaction-susceptibility is apparently distinct on the fourth and fifth days after inoculation, then irregular until the thirteenth and fourteenth days, after which the reactions are the rule. Since ten to fifteen days are required for the full development of tubercle, it is more than probable that the specific susceptibility is not fully acquired until this stage is reached. 6. The tuberculin-extracted bacilli used probably still retained enough active substance to produce susceptibility. The fat-extracted bacilli appeared to have more reacting substance than the others. Neither were completely extracted so as to be free from intact well-stained tubercle bacilli. The nuclein substance of the bacilli was presumably more abundant in the fat-extracted bacilli, and may produce reaction-susceptibility independently of the fat, though this is only suggested by the results of the experiments.

Journal of the Michigan State Medical Society, Detroit.

August.

64 *Treatment of the Intestinal Fistulas by the Elastic Ligature. Theodore A. McGraw.
65 The Influence of Breast Feeding on the Infant's Development. Henry Dwight Chapin.
66 Cow's Milk for Infant Feeding. Augustus Caillé.
67 Milk Laboratories. John Lovett Morse.
68 *Substitute Feeding During the First Year. Thomas Morgan Rotch.
69 Difficult Cases of Feeding. L. Emmett Holt.

64. **The Elastic Ligature in Intestinal Fistulas.**—McGraw considers the etiology and pathology of intestinal fistula, and in speaking of the treatment, describes his method of procedure, which obviates the necessity of a second operation in these cases. The bowel is drawn out of the wound until a portion is reached that is nearly normal in appearance, and then a lateral anastomosis is made between the two limbs with an elastic ligature, the idea being to provide a passage for the bowel contents and thus enable the false anus, which is no longer needed, to heal. After the ligature has been applied the bowel is disinfected and all that seems in condition to recover is pushed back into the peritoneal cavity. That part which is mortified, and that which appears dangerously near mortification, is fastened outside of the abdomen by stitching it to the abdominal wall. The immediate result of such a procedure would be the relief of the distended bowel by means of the false anus and the gradual subsidence of internal congestion. When that had taken place and the ligature had cut through, it was hoped that the fistula would heal spontaneously or could be made to heal by inverting the ends of the protruding bowel—a simple operation of little danger. Two cases are reported which, though fatal, were both successful in opening the passage between the afferent and efferent bowel, and in obviating the passage of feces through the false anus. In both cases the false anus had begun to heal before death cut the matter short.

68. **Substitute Feeding During First Year.**—Rotch's article reiterates what he has said before, that infants can not be fed by rule of thumb. We can only lay down the general principles governing the milk supply and subsequent modification of the milk and, finally, its adaptation to the individual infant. Each infant must be studied by itself. The most successful feeder of infants will be the man who is thoroughly acquainted with the many resources in our modern methods of percentage feeding, and who can appreciate the individual needs of the especial infant.

Journal of Nervous and Mental Disease, New York.

August.

70 *Remarks on the Surgical Treatment of Obstetrical Paralysis. Royal Whitman.
71 The Retrograde Atrophy of the Pyramidal Tracts. J. Ramsey Hunt.
72 Manic-Depressive Insanity, with the Report of a Typical Case. John W. Stevens.
73 Microscopic Study of the Non-compressed Spinal Cord in a Case of Pott's Disease. Alfred Gordon.

70. **Surgical Treatment of Obstetric Paralysis.**—Whitman divides these cases into three classes: 1. Those seen soon after birth, in which the paralysis may be combined with other, and what is often considered more serious injury, such as fracture. 2. The cases brought for treatment during the latter part of the first year when it has become apparent that complete recovery is doubtful. 3. The cases seen in childhood and adolescence when treatment is sought from the hope that the disabled arm may be made more useful. In the first class the treatment is rest and the infant's arm should be fixed to the chest with the fingers extended. Gentle massage, flexion, extension and supination of the forearm, manipulation of the fingers, and the like, should be employed. As soon as the local sensitiveness has subsided the same treatment should be applied at the shoulder. In the second class manipulation and forced movements at each joint, with the aim of regaining the entire range of normal motion, is a first essential, combined with systematic exercise, as far as is compatible with the intelligence of the patient. It is during this period that progressive distortions occur, which in themselves prevent recovery, and it is never possible to estimate the degree of irremediable injury to the nervous apparatus until they are overcome. The most important of the distortions due to obstetrical paralysis is the subluxation of the

humerus downward and backward. Cases of this character are often classified as congenital rather than acquired dislocations of the shoulder. The author's method of treatment of this displacement, both the congenital and the acquired, has been somewhat similar to that of the reduction of congenital dislocation of the hip. Contractions are overcome by leverage of the arm, first in an elevated and an extended attitude, the aim being to force the head of the humerus forward. It is then pushed upward by lowering the arm, and finally, by adducting it forcibly while the scapula is fixed as well as may be. When the displacement has been reduced other contractions are stretched. The limb is then fixed, usually by adhesive plaster and the plaster bandage, with the elbow behind the thorax and with the forearm, if practicable, in supination across the chest. This fixation is continued for weeks or months, as may be necessary. After its removal more or less forcible manipulation must be carried out, with the aim of preventing the tendency toward recurrence of the former attitude. If the paralysis of the deltoid muscle is complete the head of the humerus must be held in its new position and in outward rotation until it becomes securely fixed, or, if necessary, the attitude may be assured by arthrodesis. If the injury to the brachial plexus has been extensive and subluxation of the humerus is not present, operative treatment may be of value in lessening the disability.

Bulletin of the Johns Hopkins Hospital, Baltimore.

July.

74 The Biography of Stephen Hales, D.D., F.R.S. Percy M. Dawson.
75 *A Case of Cancer of the Mamma Cured by Means of Roentgen Rays. E. Schiff.
76 Thrombosis of the Internal Iliac Vein During Pregnancy. F. C. Goldsborough.
77 Changes in the Nervous System After Parathyroidectomy. Colin K. Russell.
78 The Relation Between Carcinoma Cervicis Uteri and the Rectum, and Its Significance in the More Radical Operations for that Disease. John A. Sampson.
79 Observations on a Study of the Subclavian Artery in Man. Robert B. Bean.
80 *The Blood in Pregnancy. Wm. L. Thompson.
81 A Case of Generalized Lead-Paralysis, with a Review of the Cases of Lead Palsy Seen in the Hospital. Henry M. Thomas.

75. Breast Cancer Cured by the Roentgen Ray.—Schiff reports such a case on account of the most favorable result of the cure and also because he was enabled to study the case histologically. The left thorax was invaded by a tumor with large basis and of a solid consistence, extending from the left sternal margin to the axillary cavity where it reached the glands and formed a hard bunch. The surface was ulcerated and bled when touched. Ten or twelve tumors of about the size of a hazelnut were located along the lower border of the larger tumor. Five similar nodules were located on the back of the patient. Beneath the mass of enlarged axillary glands existed a crateriform cavity having gangrenous edges and a necrotic base. The supra- and infra-clavicular glands were hard. The diagnosis was inoperable cancer *en cuirasse* of the left mamma with lenticular metastases of the cutis. It was decided to use the Roentgen ray, and after the third sitting the pains diminished considerably and the purulent discharge was lessened. Improvement continued, and four months after beginning the treatment, excepting some superficial excoriated parts, a flat scar, crossed by some enlarged capillary vessels, had taken the place of the former tumor. The cutaneous metastasis had disappeared, and all the lymph glands had become soft and were diminished in size. The general health of the patient was good. An examination of the fragment of the lenticular nodule of the back, which was considerably diminished in size by the treatment, showed that the greater portion of it consisted of large fibers, poorly nucleated, having the appearance of cicatricial tissue. Between the fibers were seen leucocytes. The deeper parts of the fragment contained cancerous tissue in the shape of small bundles of cells separated by a stroma of very thin fibers. A fragment of the granulated surface of the cancerous ulceration showed the normal appearance of granulation tissue with many new-formed capillary vessels. Another fragment excised near the preceding one showed beneath a regenerating epidermis a large layer of cutis, and in its lower layers a small nest of cancerous tissue composed of six or seven cones pressed together.

80. The Blood in Pregnancy.—Thompson conducted a series of observations concerning the blood state of pregnancy in 12 cases, all living under practically the same hygienic and dietary conditions, suffering from no constitutional disease and having no special pathological affections. The observations covered a period of seven months, and each patient was examined once a month during that time. Two of the cases first came under observation at the second month of pregnancy; two at the third month; four at the fourth month; three at the fifth and one at the sixth month. Four of the cases were followed throughout their pregnancy and subsequent delivery, and eight are still under observation. The examination in each case included (1) an enumeration of red blood corpuscles; (2) estimation of hemoglobin percentage; (3) leucocyte count; (4) differentiation of leucocytes, and (5) determination of specific gravity of the total blood content. From these examinations the author draws the following conclusion: 1. A moderate decrease is observed in red blood corpuscles rather early in pregnancy, remaining subnormal throughout the middle months, to rise again to normal at the termination of pregnancy—not, however, in all cases. 2. A low percentage of hemoglobin constant throughout the first seven months, rapidly approaching normal as pregnancy draws to a close. 3. A slight absolute leucocytosis exists in every case of pregnancy, but this does not support the theory that it is due to positive chemiotaxis. 4. There is no variation from the normal in the different forms of white corpuscles, the leucocytosis affecting all forms of white cells alike. 5. The specific gravity is high at the onset of pregnancy, diminishing by progressive steps to reach its lowest level in the middle months, rising to normal at term.

Journal of Cutaneous Diseases, New York.

August.

82 *A Peculiar Eczematoid Eruption of the Lip Region. Henry W. Stelwagon.
83 A Second Case of Creeping Eruption. Henry W. Stelwagon.
84 Some Notes Concerning Domestic Remedies Formerly Used in Skin Diseases. James C. White.
85 Reasons for Considering Dermatitis Coccidioides an Independent Disease. Douglass W. Montgomery and Howard Morrow.
86 A Case of Multiple Myomata of the Skin. W. A. Hardaway.

82. Peculiar Eczematoid Eruption.—Stelwagon describes cases of eruption about the region of the lips that had many of the aspects of eczema, but with such unusual features as to give it a distinctive stamp. The eruption usually begins on the vermilion of the lips, and shows at first as a slight superficial eczematous irritation with scanty exfoliation, and in some cases, or at times in the same case, variable crusting. There never seems to be any liquid exudation. There is rarely any distinctive thickening or infiltration; some burning and heat are sometimes complained of, but seldom any troublesome itching. Slight fissuring is not uncommon, especially at the angles of the mouth, and these may be painful. The condition may retrogress and fluctuate, or even relative or complete recovery take place, to be followed, as a rule, sooner or later by collapse. After some weeks or months the disease generally extends somewhat on to the skin proper, either more or less evenly or with a slight or pronounced segmental border. Usually after some duration, or sometimes coincidently with the lip involvement, the malady spreads inward to the contiguous mucous membrane, where it appears first as an ill-defined pinkish discoloration, which later looks somewhat thickened, of a deeper red, and with or without a superficially abraded or coated surface, sometimes slightly roughed. The disease is limited usually to the lower lip. In two or three instances the upper surface of the tongue also was invaded, but the invasion was not characteristic of leukoplakia. Usually the mucous parts are only slightly sensitive or tender, except when the patient takes very hot drinks or acid fruits. The neighboring cutaneous surface also becomes invaded. The face lesions are rarely seen higher up than the level of the alae nasi, their most common region being just beyond these parts and near the angles of the mouth and on the chin. The disease is evidently of a benign character, and leaves absolutely

V 4
190

no trace. The interest naturally centers itself in the question of diagnosis, which hovers between eczema seborrhoicum, lupus erythematosus or a disease *sui generis*. The disease on the skin is rebellious and that on the mucous membrane seems almost irremedial. The treatment of the cutaneous lesions that seems to be most useful is similar to that of eczema seborrhoicum. On the vermilion of the lips occasional mild superficial cauterization with liquor potassæ and the subsequent application of a soothing ointment will have a curative influence. After relief is afforded attention to the digestive tract will do much toward warding off relapses, which are the rule. Beyond the maintenance of the free action of the bowels and caring for the digestive functions, little else seems to be called for or is of any distinct service in the way of constitutional treatment.

Journal of the Mississippi State Medical Association, Vicksburg.

August.

87 *Address on Hookworm Disease or Uncinariasis, with Special Reference to Its Eradication. Charles Wardell Stiles.
88 Malaria: Its Causes and Treatment. J. M. Alford.
89 Treatment of Broncho-pneumonia. H. L. Sutherland.
90 The Importance of Early Diagnosis in Syphilis. S. W. Johnston.

87. **Hook-Worm Disease.**—Stiles describes the species of hookworm found in man with reference to its general structure, its habitat, eggs, embryo and method of infection. The classes of cases and the symptoms of the disease are discussed thoroughly, special emphasis being placed on the so-called "hookworm stare" and the findings in the feces. The distribution and economic aspects of the disease also come in for their share of attention. With reference to its prevention Stiles says that the most rational and radical method of procedure is to dispose properly of the fecal discharges, as these are directly responsible for the conveyance of the infection. It is necessary, first, that state and local boards of health call attention to the necessity of building properly constructed privies, using them after they are built, and cleaning them periodically. Second, the physician after seeing his patient, should inspect the hygienic conditions of the premises and instruct the family in the methods by which the disease is spread. Cotton mills and other factories should instruct their employes in the fundamental principle of hygiene which will restrict the spread of hookworm disease. Men seeking employment in mines should be subjected to examination for hookworms and, if found infected, should be excluded from employment until they have been treated properly. Boiling or filtering the drinking water and personal hygiene are also of importance, but dwindle into insignificance when compared with the proper disposal of fecal matter. Stiles suggests the following treatment: Place the patient on a milk and soup diet for two or three days. Give an aperient to clear out mucus, which so frequently covers the worm. A mixture containing senna, 2 oz.; calomel, 6 gr., is divided into four doses, one dose to be given every two hours, beginning at noon. The following day give 31 gr. of thymol at 8 a. m. and again at 10 a. m., and magnesium or other laxative at noon. Caution the patient not to take any alcoholics while the thymol is in the body. If he is weak give stimulants other than alcohol. Let the anthelmintic treatment rest for a week, but give the patient good, nourishing food and iron. Repeat the treatment once a week until the parasites are all expelled.

Pennsylvania Medical Journal, Pittsburg.

July.

91 My View of the Profession. A. N. Neyman.
92 Some Drugs Useful in Cardiac Affections. Solomon Solis-Cohen.
93 The Syphilitic Nose and Throat. Charles P. Grayson.
94 *Some of the More Unusual Results of Movable Kidneys. Charles P. Noble.
95 Danger Signals of Intracranial Infection from the Pneumatic Cavities of the Ear and Nose. B. Alex. Randall.
96 The Upper Respiratory Tract. J. C. McAllister.
97 The Use of Myelocene in Catarrhal Deafness. W. B. Weidler.
98 Traumatic Rupture of Internal Viscera Without External Signs of Injury. W. G. Weaver.
99 Perforated Gastric and Duodenal Ulcers. John H. Gibbon.

94.—See abstract in THE JOURNAL, xlii, ¶13, p. 676.

Illinois Medical Journal, Springfield.

August.

100 *Vaccination. What to Do; How to Do It; What to Expect. Ezra R. Larned.
101 *A Unique Case of Imperforate Hymen. C. B. Horrell.
102 The Physician and the State. George W. Webster.
103 Relationship of Excretion of Common Salts to Dropsy and Renal Diseases. N. S. Davis, Jr.
104 Radioactivity. J. C. Sullivan.
105 Bacteriuria, with Special Reference to Coli Bacilluria. Arthur R. Elliott.
106 The Medical Treatment of Puerperal Eclampsia. H. H. Whitten.
107 Defects of Vision and Hearing in the Public Schools. J. W. Smith.
108 When to Operate for Appendicitis. S. C. Stremmel.
109 Report of a Case of Intestinal Obstruction. J. F. Percy.
110 *Infectious Ulcer of the Cornea. Wm. H. Wilder.
111 Acute Pancreatitis, with Report of Case. F. A. Guthrie.
112 Lumbar Puncture: Its Value in Diagnosis and Treatment. E. P. Cook.

100.—This article has appeared elsewhere. See THE JOURNAL of July 23, ¶62, p. 284.

101.—See abstract in THE JOURNAL, xlii, p. 1511.

110.—Ibid., p. 1441.

Medical Age, Detroit.

August 10.

113 Special Topography of the Ureter, Rectum, Liver, Pancreas and Spleen. Byron Robinson.
114 Compound Comminuted Fracture Associated with Dislocation of the Ankle Joint; Compound Comminuted Intercondyle Fracture. L. L. McArthur.
115 Tubercular Spondylitis—Etiology. Edwin W. Ryerson.

Kansas City Medical Index-Lancet.

August.

116 Stone in the Kidney: Its Diagnosis and Operative Treatment. Joseph Ransohoff.
117 The Early Diagnosis of Pulmonary Tuberculosis. H. C. Shuttee.
118 Notes on Some of the Newer Ophthalmic Remedies. Joseph S. Lichtenberg.
119 Malaria: Its Complications and Sequelæ. R. W. Caldwell.
120 Scabies. Halsey M. Lyle.

The Post-Graduate, New York.

August.

121 Care of the Newborn. Augustus Caillé.
122 A Contribution to the Treatment of Fractures of Both Bones of the Forearm. Carter S. Cole.
123 Tumors. Robert Langerhans.
124 Clinic by Dr. Albert Hoffa, Professor of Orthopedic Surgery in Berlin, Held at the Post-Graduate Hospital, June 3, 1904. Henry Ling Taylor.
125 Aural and Ophthalmic Clinic. S. R. St. John Roosa.
126 Dietary of the Child in Health and Disease. Herman B. Sheffield.

Quarterly Journal of Inebriety, Hartford, Conn.

July.

127 Summary of the Effects of Alcoholic Liquors on the Functions and Structures of the Human Body in the Small, Moderate and Large Doses, Both in Health and in Conditions of Disease. Also on the Degeneracy of Offspring. The late N. S. Davis.
128 Recent Contributions to Our Knowledge of Alcohol and Its Action on the Animal Body. Winfield S. Hall.
129 Evolutionary Pathology of Chronic Alcoholism. W. Ford Robertson.
130 Unconscious Pro-alcohol Influences in Literature. John Madden.
131 Disguised Intemperance. David Paulson.
132 Alcoholism and Tuberculosis. Legrain.

Washington Medical Annals, Washington, D. C.

July.

133 Early Diagnosis of Pott's Disease. Frank P. Vale.
134 The Value of a Knowledge of Abnormal Mobility of the Iris as an Aid in Diagnosing Diseases of the Nervous System. D. Kerfoot Shute.
135 Three Cases of Endocarditis, in Two of Which There Was Also Pericarditis. D. S. Lamb.
136 Case of Chronic Pericarditis and Hypertrophy of Heart. D. Percy Hickling.
137 Scarlet Fever. Thomas N. Vincent.
138 Cases of Fibroids of the Uterus. Henry D. Fry.
139 Some Responsibilities of the Modern Obstetrician. Henry D. Fry.
140 Hypertrophied Pharyngeal, Faucial and Lingual Tonsils; Their Significance and Treatment. C. R. Dufour.
141 Case of General Cancer. N. D. Graham.

Canada Lancet, Toronto.

August.

142 Newer Methods of Diagnosis of Kidney Cases as Applied to Renal Surgery. W. A. Hackett.
143 Lithotomy vs. Litholapaxy. Charles B. Shuttleworth.
144 Oration in Surgery, Minnesota State Medical Association. Alexander Hugh Ferguson.
145 The Surgical Treatment of Enlarged Prostate. George A. Bingham.
146 Enlargement of the Prostate Gland. Frederick W. Marlow.
147 Treatment of Prostatic Hypertrophy. T. K. Holmes.

Dominion Medical Monthly, Toronto.

August.

148 Address, Ontario Medical Association. J. F. W. Ross.
149 Newer Methods of Diagnosis of Kidney Cases as Applied to Renal Surgery. W. A. Hackett.

Canadian Practitioner and Review, Toronto.

August.

150 Address, Ontario Medical Association. J. F. W. Ross.
151 A Case of Appendicitis in Pregnancy. John Sheahan.
152 A Restatement of the Attitude of the Profession Toward Placenta Previa. K. C. McIlwraith.

New York State Journal of Medicine, New York.

August.

153 Report on the Results in Infant Feeding with Different Kinds of Pure and Impure Milk in Tenement Houses of New York City. A Clinical and Bacteriologic Study. Wm. H. Park and L. Emmett Holt.
154 Treatment of Puerperal Infection. James Hawley Burtenshaw.
155 Non-surgical Treatment of Appendicitis. Peter Stockschlaeder.
156 Abortion, with Report of Cases. Jennie M. Turner.

California State Journal of Medicine, San Francisco.

August.

157 *Preliminary Report on a Peculiar Infection of the Mouth and Throat, with a New Variety of Oidium Resembling Thrush. H. R. Oliver.
158 Illustrative Cases of Myelogenous Leukemia—Preliminary Report. George H. Evans.
159 Concretio-Pericardii Cum Corde. George L. Cole.
160 Tendon Transplantation, with Report of a Case. S. J. Hunkin.
161 Intestinal Obstruction—with Report of Three Unusual Cases. C. S. Lockwood.
162 Surgical Anatomy of the Inguinal Canal. Claire W. Murphy.
163 Uretero-cystostomy, with Report of Case. J. Henry Barbat.
164 Innervation of the Heart and Use of Cardiac Stimulants in Treatment of Shock. O. O. Witherbee.
165 Determination of the Functional Capacity of the Kidneys with Special Reference to Kidney Surgery. M. Krotoszyner.

157.—To be noted editorially.

Mobile Medical and Surgical Journal.

July.

166 Cardiac and Vascular Complications and Sequels of Typhoid Fever. Jerome Cochran Lecture. William Sydney Thayer.
167 Some Remarks on Hookworm Disease. Claude A. Smith.

Physician and Surgeon, Detroit.

June.

168 The Present Campaign Against Insanity. William J. Herdman.
169 Report of a Case of Cellulitis Involving the Arm and Forearm. Dean Lorec.
170 A New Retractor for Mastoid Operation. Emil Amberg.

FOREIGN.

Titles marked with an asterisk (*) are abstracted below. Clinical lectures, single case reports and trials of new drugs and artificial foods are omitted unless of exceptional general interest.

British Medical Journal, London.

August 13.

1 Discussion on Standards of Ventilation. Drs. Haldane, Jones, Oliver, Hay, Thomas, Symons, Hunter and Groves.
2 Discussion on Compressed-air Illness or Caisson Disease. Drs. Oliver, Smith, Snell.
3 The Influence of Antenatal Conditions on Infantile Mortality. G. F. McCleary.
4 *Discussion on Malta Fever. Drs. Bruce, Bassett-Smith, Hutton, Grech, Clarkson and Preston.
5 A Naval Surgeon's Notes. John Lloyd Thomas.
6 The General Hospital in War: Its Working and Staff. C. R. Kilkelly.
7 Is the Widespread Slight Training in Ambulance Work Beneficial to the Community? S. Hamilton.
8 *The Organization of the Treatment of Syphilis in the Navy. F. H. A. Clayton.
9 *Note on the Wounded in the Naval War Between Japan and Russia, 1904. S. Suzuki.

4. Etiology of Mediterranean Fever.—Bassett-Smith summarizes his paper as follows: Mediterranean fever shows no sign of decrease at Haslar. Both officers and men suffer severely, but the percentage of young officers and men in early adult age is proportionately great. All ships appear to be equally affected, according to the time spent by them at Malta Harbor, the permanent harbor ships giving the most cases. Men very frequently contract the fever while in Malta Hospital, while admitted for other diseases, and the nursing staff in attendance on them show a great tendency to develop the disease, but whether that is due to its endemicity or to direct infection there is no clue. Most of the cases occur during May and June. There is no evidence of infection being received from the shore other than through the agency of wind-carried germs. The organism can retain its vitality for a considerable period when desiccated, but dies in about five days in sterile fresh and sea water and urine, but remains active long in sterile milk. The organism is very virulent in laboratory cultures, readily causing attacks when taken in by the mouth or through accidental inoculation. The micrococcus melitensis is present in the peripheral blood in all cases during the early stages and in severe pyrexial relapses. In the afebrile intervals and following cachexia it is not demonstrable. In no case is it very abundant. The disease may remain latent for several months, and relapses may occur for a period of two years at least, but when once completely cured it confers permanent immunity. The evidence at hand suggests that in the presence of bad sanitation, where the disease is endemic, infection is probably conveyed in dust by winds, mostly in the hot dry months following the rains, and that it gains access to the patient through some breach of surface, probably in the throat.

8. Treatment of Syphilis in the Navy.—Clayton says that men who have contracted syphilis should have the consequences of their misfortune impressed on them by giving them a small pamphlet of advice, and should, as far as possible, be prepared both for combating the disease and for preventing any ill effects of mercury by proper care of the teeth, etc. Their attendance for observation and treatment should be made a part of routine both in ships and shore establishments, and proper records of attendance kept. Such records should include the dates and nature of symptoms and treatment, and any other points of value, in order that to ensure continuity, the requisite information might be sent with the patient on transfer to another ship.

9. Observations of a Japanese Naval Surgeon.—Suzuki's experience during several actions has led him to the following conclusions as regards the surgical arrangements on board warships: 1. First-aid dressings are of importance if applied immediately after the injury, at the site of its occurrence, instead of being applied in the surgery or hospital. Ambulance parties should be stationed at various parts of the ship. The practical and careful education of ambulance parties is essential to future progress in the treatment of wounds. 2. The first-aid packages used in the navies of different countries are folded too small, as the wounds inflicted by shell fragments are always larger than those made by small caliber rifle bullets. A convenient size for the sterile absorbent cotton-wool is four inches square and one-quarter inch thick, covered with gauze and stitched in a few places around. To this pad the middle part of a gauze bandage eight feet long and four inches wide should be stitched and kept aseptic. This does away with the triangular bandage. 3. The modes of carrying the wounded vary with the size and build of the ship. Hand-carrying is practiced in small ships. In the battleships and first-class cruisers, stretchers may be used if the surgeons impress on the bearers how to handle them quickly. No one form of stretcher is suitable for all purposes on board ship. 4. On board warships in action surgeries should be provided in more than one place, even when there is only one surgeon on board. A place below water-line is preferable, but every ship does not allow surgeons to do this. 5. Slight protection may save serious injury to the body. It is possible that in time every combatant on board warships in action will wear some kind of a protecting mask and jacket, such as the rifle-proof jacket devised by the Germans some time ago. It is important to remember, in regard to the disposal of wounded men, that the non-firing side of a ship is more dangerous than the firing side, that is, the one exposed to the enemy, as the fragments of bursting shells are disposed in a radiating manner. 6. Strict observance of aseptic surgery is essential in military as in civil surgery, but the performance of serious operations on board warships is incompatible with the good progress of cases. It is advisable to transfer such cases as soon as possible to hospital ships. The surgeon-in-chief must take care to secure the fullest efficiency in the use of hospital ships as non-combatant steamers are desired to be left as far as possible behind the actual seat of war.

The Lancet, London.

August 13.

10 *The Value of the Addition of Citrate of Soda to Cow's Milk in Infant Feeding. F. J. Poynton.
11 Infective Cyclitis (So-called Sympathetic Ophthalmia). H. Percy Dunn.
12 Suggestions for the Prevention of Puerperal Infection in Private Practice. John W. Byers.
13 Nephritis in Infantile Scurvy. George F. Still.
14 *Interrupted Circulation as a Therapeutic Agent. Wm. Ewart.
15 An Epidemic of Acute Ophthalmia. Simeon Snell.
16 The Prevalence of Cancer and Its Increase. W. Rodger Williams.
17 Paralysis from Lesion of the Upper Part of the Brachial Plexus. R. T. Williamson.
18 A Case of Anterior Dislocation of the Semilunar Bone of the Wrist. Ernest W. H. Groves.
19 A Case of Sloughing Pancreas; Death from Secondary Hemorrhage. W. H. Brown.

10. Citrate of Soda in Infant Feeding.—Poynton attaches more importance to the peculiar nature of the fluid fed the infants as a substitute for mother's milk than to its percentage composition. It is not always possible to obtain the proper kind of milk, nor can all babies be fed alike because of individual peculiarities. For some time the author has been following a method proposed about eleven years ago by Dr. A. E. Wright, that of mixing with each feeding citrate of soda. The advantages accruing from the use of citrate of soda are: 1. It renders the curd of cow's milk more easily digestible. 2. It is cheap. 3. It is convenient to handle, easy to control and progressive in principle. 4. It allows the milk to be given in a more concentrated form and thus avoids, to some extent, the danger of underfeeding. 5. There is no danger of scurvy. 6. Given as a medicine it gains the confidence of the mother. The indications for its use are: (1) as a routine for weaning a healthy infant onto cow's milk; and (2) for correcting milk dyspepsia. The drawback is a tendency to constipation, which is, however, easily controlled. The limitations are: 1. In rare cases of complete intolerance of cow's milk. 2. In severe cases of gastroenteritis from impure milk. 3. In organic disease, such as congenital hypertrophic stenosis. 4. In very intractable cases which have been subjected to all sorts of different methods beforehand. As a routine method for the artificial feeding of the poor child, the best is citrate of soda in the milk, provided the milk is sound.

14. Interrupted Circulation as a Therapeutic Agent.—Ewart discusses the physiologic action of "interrupted circulation" in the treatment of rheumatoid arthritis. He believes that the emptied arteries suddenly receive a ramming charge when the tourniquet is removed, and that the internal surface of the capillaries and of the lymph spaces, in which they are immersed, is submitted to sudden stimulation. On the other hand, during the preceding stage of ischemia a certain amount of suction must have existed within them, not only owing to the collapse of the elastic tissues, but also from the intravascular negative pressure set up by the procedure. The tendency would be for the emptied blood vessels to suck up some of the remaining tissue lymph or in cases of inflammation some of the more fluid inflammatory exudates. In rheumatoid arthritis, with its special features of immobilization of the joints and of stagnation of the lymphatic circulation, both theories would fulfill direct indications; and it proves to do so in the two cases cited by the author. The technic is exceedingly simple. A padded armlet of soft leather, or a circular pad of lint and cotton-wool of sufficient thickness to protect the nerves having been secured round the upper arm, or the thigh, a loop of India-rubber tubing of suitable thickness is passed behind the limb over the pad, and the two ends of the loop are strongly put on the stretch with one hand. The other hand grasps the tubes close up to the front of the lint, thus tightening the loop into a strong ligature or tourniquet. The degree of arterial occlusion depends on the strength with which the two ends of the loop are pulled up, the limb having previously been drained of much venous blood by raising it and by stroking the larger veins empty. The compression quickly induces blanching of the skin and numbness of the extremity, similar changes doubtless taking place through the thickness of the limb. For ordinary purposes half a minute, or at most two minutes of this will suffice. The tube is then let go, and this is at once followed by a bright cutaneous flush of capillary injection and a pleasant feeling of warmth. The same maneuver is repeated, say six times, at intervals of a few seconds. Two or more such sittings may be used daily. In both the author's cases the results have been most satisfactory. The synovial and lymphatic effusions have been benefited more largely than the periarticular fibrosis, and this is consistent with the views expressed as to the probable mode of action of this method. In the treatment of the stiffness of joints there is a definite help in the numbness which accompanies the stage of ischemia, and which allows, within prudence, an increased amount of passive motion to be applied. The method would, therefore, be specially promising in the early stages and in the exudative forms of rheumatoid arthritis, it being understood that it is merely an adjunct in our treatment, from which we can not spare any other available resource, whether local or constitutional.

Medical Press and Circular, London.

August 10.

20 Difficulties Met in the Experimental Treatment of Cancer. Skene Keith.
21 The Present Position of Radium in Therapeutics. C. M. O'Brien.
22 New Methods of Treatment. Lucein Weyll.
23 The Mode of Origin of Nasal Polypi. Eugene S. Yonge.

The Clinical Journal, London.

August 10.

24 Clinical Lecture on Pain in the Chest. F. J. Smith.
25 Neurotic Children. Leonard Guthrie.
26 Personal Hygiene. Leonard Williams.

Calcutta Practitioner.

April.

27 *Hydnocarpus Oil in Diabetes, Rheumatism, Chronic Skin Diseases and Leprosy. Hem Chandra Sen.
28 Some Obscure Forms of Diseases of Joints and Diseases in Their Neighborhood. Suresh Chandra Bhattacharya.
29 Case of Chronic Malarial Fever. Indu Madhab Mallick.

27. Hydnocarpus Oil.—This oil is obtained from the seeds of *Hydnocarpus wightiana*, or *H. inebrians*, belonging to the natural order *Bixinæ*. It is a common tree found along the coast ranges of the western Gats. The seeds yield by expression or by boiling in water about 44 per cent. of oil which has a faintly yellow color and is devoid of any characteristic odor. It is allied to Chaulmoogra oil, but it does not, at ordinary temperature, deposit a crystalline fatty acid. Treated with sulphuric acid, the oil affords the gynocardiac acid reaction. The oil has been employed as a domestic remedy by the natives of the western coast ranges in skin diseases, ophthalmia, and as a dressing for wounds and ulcers. It is a gastrointestinal irritant and in large doses acts as an emetic and purgative. It is prescribed in doses of from 15 minims to two drams in cases of leprosy, various skin diseases, secondaries of syphilis, chronic rheumatism, and diabetes. When taking the oil the patient should take light liquid food, soft rice, etc. It is well to combine it with the decoction of catechu. When used as an ointment it is mixed with equal parts of sulphur, camphor, lime juice and jatropha carcus oil.

Presse Médicale, Paris.

30 (I, No. 51.) *Traitement des prurites. F. Trémolières.
31 La question du lait (of milk). P. Difloth.
32 (No. 52.) *Cirrhose du foie et appendicite (cirrhosis of liver and ap.). T. Tuffier and A. Mauté.
33 Les abcès du foie dans la fièvre typhoide. A. Guinard.
34 (No. 53.) *La cure radicale de la hernie crurale. Le procédé du rideau et de la suture des gaines (curtain act and suture of sheaths). H. Chaput.
35 A propos d'un cas de super tuberculisation. Contamination mutuelle des tuberculeux et nécessité de leur isolement individuel. P. Carnot.
36 A propos des tremulations ventriculaires (in massage of heart). E. Gley.
37 Insuffisance nasale fonctionnelle, et ré-éducation respiratoire. M. Lermoyez.
38 (No. 53.) Technique de l'hysterectomie abdominale pour cancer du col de l'uterus (of neck). F. Jayle. Illustrated.
39 Les toxicomanes. A propos d'un cas d' héroin-omanie. G. Comar and Huvat.
40 (No. 54.) L'analgésie locale par la stovaine. P. Reclus. See abstract, page 575.
41 *Traitement de l'hystérie et de la neurasthénie par l'isolement et la psychothérapie. A. Thomas.
42 *Le faux rein flottant (false floating kidney). A. Mayor.

30. Treatment of Pruritus.—Trémolières reviews the various endocutaneous, hematic and nervous causes that may contribute

to induce pruritus. He attributes it essentially to a pathologic condition, an exaggeration of the perpetual and reciprocal interchange of impressions between the nerve centers, the tissues, the viscera and the sensory and cutaneous terminals, a true nervous circulation, with a closed circuit. In this closed circuit excitations circulate and can not escape. They accumulate, and although each may be trivial in itself, yet by their accumulation they pile up a state of sensory excitability which in time manifests itself as pain or pruritus. Each cell stores up in its memory the excitations that have acted on it, and this "mnemodermia," as Jacquet calls it, aids in locating of a pain or pruritus later. For example, if the hands are chilled during a drive, a glass of spirits later in the day is liable to induce pruritus in the parts of the hands that had been most exposed. Pruritus may be described as the exaggeration of those elementary cutaneous sensations which emanate from the sensory fibers of the great sympathetic nerve. Prophylaxis of pruritus consists in avoiding nerve strain and overwork of all kinds, in studying temperance in all things, with an easily digestible diet, wearing linen or fine cotton next the skin, with exercise and cold douches or tubs, followed by frictioning, to aid in the distribution of the peripheral sensibility. Removal of the cause of the pruritus may be promoted by venesection, 200 to 250 gm., repeated after a few weeks if necessary. Among the symptomatic measures great relief may be obtained from tempered douches, once or twice a day, at 35 C., one to three minutes at a time, the jet interrupted, terminating with a brief, very cold douche. The various modes of treating pruritus by different authorities are reviewed, but the main stress is laid on prevention by removing the cause and reducing the general nervous excitability.

32. **Cirrhosis of Liver and Appendicitis.**—The influence of appendicitis on the liver is confirmed by the case described. The patient was a young man who succumbed to peritonitis the fiftieth day after the first vague symptoms of appendicitis. Two appendicitic abscesses had been evacuated. At the necropsy the organs were found sound, with the exception of the liver, which presented a typical picture of recent portal cirrhosis. There were no antecedents of alcohol, malaria or syphilis, and the connection between the appendicitis and the sclerous process in the liver seems unquestionable. Letulle, Achard and Dieulafoy have observed somewhat similar cases. All this testimony suggests that the plan of waiting and operating *à froid* in appendicitis may leave the liver and kidneys a prey to evils that might be avoided. The intensity of the infectious process and the reactional aptitude of the subject, with his inherited predispositions, will determine whether the result is trivial and transient or entails a chronic nephritis or cirrhosis of the liver.

34. **The "Curtain" Operation for Femoral Hernia.**—Chaput points out that in very large femoral hernias the neck of the sac extends in front of the femoral vessels in such a way that the hernia is liable to recur through the femoral canal, either in front of the femoral vessels or inward from the femoral vein. The best technic to prevent recurrence consists in pulling down, like a curtain, the internal oblique and the transversalis, as far as the pectineal spine, completing the operation by suturing the sheaths of the vessels to Poupart's ligament, both in front and inside, and also to the internal oblique. He has operated on 10 patients by this "curtain" technic, and has found it highly satisfactory in every respect.

41. **Isolation in Public Hospitals in Hysteria and Neurasthenia.**—Déjerine is so impressed with the value of isolation and psychotherapy in the treatment of hysteric and neurasthenic women that he has adopted these measures in his general hospital practice. He isolates the patient's bed in the ward by curtains around the bed, prohibiting all intercourse with the family, friends or even the nurses. The visit of the physician in the morning and of the interne in the evening, and the attendance of the nurses under the strict supervision of the head nurse, are the only means of communication between the patient and the world outside her curtains. The only exception is that other patients of the same category, improving or cured under this treatment, are brought to the bedside and allowed to describe the favorable results obtained in their case. The course of isolation and psychotherapy lasts at least three or four weeks, but it is astonishing how complete and permanent the cure attained in this way in the public hospital. These isolation cures have generally been regarded as the prerogative of the rich. During the first week or so nothing is given the patient but milk, from three to five quarts a day. Forty patients have been thus treated, and wonders have been accomplished in the cure of extreme emaciation, fixed ideas and the phobias of neurasthenics and of the contractures and paralyses of hysteria.

42. **Improved Technic of Palpation of Abdomen.**—Mayor mentions among other points that if vaselin be rubbed into the skin of the abdomen palpation is very much facilitated. The organs can be examined almost as if they were stripped of the parts above.

Berliner klinische Wochenschrift.

43 (XLI, No. 30.) *Further Inoculation from the Syphilitically Infected Chimpansee. O. Lassar (Berlin).—Ueber eine Weiter-Impfung vom syphilitisch inficirten Chimpansen.
44 *Fall von transitorischem Diabetes. F. Mann.
45 Die hemolytische Wirkung des Sublimats. L. Detre and J. Sellei.
46 2 Fälle von Cystadenoma mammæ. E. Kethel.
47 *Importance of Intestinal Gases for the Animal Body in Condensed and Rarefied Air. E. Aron.—Die Bedeutung der Darmgase für den Tierkörper in verdichteter und verdünnter Luft. (Commenced in No. 29.)
48 *Review of Recent Works on Public Health, etc. G. Meyer (Berlin).—Sammelreferat.

43. **Further Inoculation from Syphilitic Chimpansee.**—Lassar gives an illustrated description of his successful inoculation of a second chimpanzee from the first one which he inoculated with human syphilis, as mentioned in these columns at the time. The course of the infection was identical in each. The primary sore healed completely and the syphilitic lesions developed later on the brow, soles, arm and hand. These successful results suggest the possibility of obtaining an effectual curative serum from these animals. [The Paris dailies, by the way, relate that two apes which are being made the subjects of experiments in this line at the Pasteur Institute, were recently taken out for a walk by an attendant. One of them broke away and attacked an infant in a passing baby carriage, scratching it severely. The infant was taken into the institute, and the parents reassured with the statement that the ape had not yet been inoculated with syphilis.—ED.] Both of Lassar's apes succumbed later, one to genuine pneumonia, the other to acute miliary tuberculosis.

44. **Case of Transient Diabetes.**—Mann remarks that the transition of diabetes insipidus into diabetes mellitus is a rare occurrence—he knows of only a single instance, reported by Senator in 1897. He describes an additional case, which was under constant observation all the time. Diabetes insipidus developed under his eyes, and this in turn changed into genuine diabetes mellitus, accompanied by intense acidosis. This severe affection lasted only 16 days, and then disappeared as suddenly as it had come on, the acidosis vanishing before the sugar in the urine. Such an acute course of severe, typical diabetes passing into at least temporary, complete recovery, is a hitherto unknown phenomenon. The few cases of transient diabetes on record always lasted at least six weeks, and were consecutive to trauma or infectious diseases, in youthful subjects. The patient in the case described was a man of 45, who entered the hospital on account of cholelithiasis with a possibility of cancer in the stomach. Diabetes insipidus developed under expectant treatment for a month, and this became transformed into diabetes mellitus, but by the end of the second month the patient was free from any symptoms of either. Two or three months later he succumbed to sudden hematemesis, and the necropsy revealed a gangrenous carcinoma in the lesser curvature, adherent to the pancreas. The liver and brain were apparently normal, and the pancreas was macroscopically intact. If the pancreas had been microscopically cancerous, diabetes due to this source would have persisted without change to the end. The recovery noted speaks against any anatomic connection between the cancer and the diabetes.

47. **Importance of Intestinal Gases for Pressure in Pleura.**—Aron summarizes his experiments in the statement that the pressure in the pleura varies when the intestinal gases are sup-

pressed. He experimented on animals in the pneumatic chamber.

48. **Recent Works on Public Health, Vital Statistics, Etc.**—Meyer reviews a host of recent works inaccessible to physicians in general and yet repaying study. Among the points brought out we note that the morbidity in the Prussian army dropped from 908.3 per thousand in 1890 to 682.5 in 1898. The mortality has fallen from 4.1 per thousand in 1885 to 2.2 in 1898. The proportion of venereal diseases has dropped by 10 per thousand during the last five years, although the army numbered 10,218 more men. In the German army, 1898, the proportion was 19.9; in the French army, 37.2; Austrian, 61.5; Italian, 96, and English, 132.7. There has been a decrease in all the armies since 1881. The mortality from cancer in Saxony increased from .58 to .96 per thousand inhabitants between 1873 and 1899, although the total mortality during this period has fallen from 28.7 to 23.3, and that of tuberculosis from 2.29 to 1.98. The collective cancer inquiry of October 15, 1900, showed 160 male cancer subjects and 269 female to every million inhabitants in the German Empire. Behla has recently published "Die Carcinom-Litteratur," in which the titles of 5,500 works on this subject are given, classified by the organs affected. He urges that greater attention should be paid to cancer in plants and animals. His book is the outcome of years of painstaking collecting.

Centralblatt f. Chirurgie, Leipsic.

Last indexed page 682.

49 (XXXI, No. 27.) Ein neuer kompletter Apparat zur chirurgischen Paraffin-Plastik. W. Krila (Prague).
50 *Official Report of XXXIII German Congress of Surgery, 1904. Mostly auto-abstracts.
51 (No. 28.) *Sweeping Out the Choledochus. H. Kehr (Halberstadt).—Die "Choledochusfege."
52 (No. 29.) *Zur prophylaktischen Blutstillung bei der Trepanation (hemostasis). von Hacker (Graz).
53 (No. 30.) *Open Treatment of Wounds After Transplantations. F. Brüning (Freiburg).—Ueber offene Wundbehandlung nach Transplantationen.

50A. **Ephemeral Traumatic Glycosuria.**—Kausch noted this phenomenon in 11 cases of recent trauma, fracture or contusion. He ascribes it to the psychic excitement induced by the injury.

50B. **Narcosis in Diabetics.**—Chloroform should be systematically avoided for diabetics; ether is the anesthetic for them, preferably operating during the first whiffs. Chloroform induces more acetonuria than ether. The amount of the narcotic and the duration of the narcosis should be reduced to the minimum. Inhalation narcosis should always be undertaken early in the morning, and the diabetic should always be prepared for every operation with sodium bicarbonate until the urine gives an alkaline reaction. The narcosis should be restricted to a sugar-free period, if possible, but it should not coincide with the disappearance of the sugar or follow it too closely. If coma impends or has already developed, push the bicarbonate per os, per anum, subcutaneous and intravenous. Gluconic acid (carbohydrate acids) should also be given a trial. It is consumed by the organism, does not burden the carbohydrate metabolism and reduces the acetonuria.

50C. **Lumbar Anesthesia.**—Klapp announces that an oily vehicle retards the absorption of cocain. Dogs can be injected subcutaneously with a fatal dose of cocain in an oil medium without any symptoms of intoxication. It is also possible to induce complete general anesthesia in a dog by injection through lumbar puncture of cocain, in a concentrated solution of gelatin, without any signs of toxic action. His experiments have demonstrated that the absorbing power of the dura is tremendous. Intradural absorption occurs in the first hour, while the subcutaneous requires five hours. Adrenalin retards dural absorption, but not as much as it retards the subcutaneous. Lumbar anesthesia with cocain in a mucilaginous vehicle is a peculiarly convenient and effectual method of inducing general anesthesia in animals for surgical purposes. Dogs thus treated allow, without a sound, operations on the most varied parts of their body. The technic is particularly adapted for veterinary practice. The conditions are different in man. Man has more cerebrospinal fluid and does not tolerate cocain as well as the dog. The necessary fractioned sterilization of the gelatin might also interfere with its efficacy in man.

50D. **To Enhance Resisting Powers of Peritoneum.**—Mikulicz reduces the danger of an inflammatory reaction in the peritoneum during abdominal operations by artificially enhancing its resisting forces. As a specific immunization is out of the question, owing to the multiplicity of the causal agents, he accomplishes his aim by inducing an artificial hyperleucocytosis. Nucleic acid was found the most energetic agent in this respect of all the substances tested. Twenty to forty times the otherwise fatal dose of coli infection is tolerated by the guinea-pig's peritoneum without reaction when the nucleic acid is injected seven hours before the operation. The measure has been tried on man in 34 instances. It seems as harmless in the clinic as in experimental tests, and it frequently induced a hyperleucocytosis up to 25,800. The maximum is reached in man about twelve hours after the injection. All the patients passed through the dangerous first week without any peritoneal complications. The operations had included 7 resections of the stomach, 13 gastroenterostomies and other severe abdominal operations. One patient succumbed to pneumonia three weeks later, and one in a month to a pre-existing complication. The general course of the recovery seemed smoother than usually observed. He injects 50 c.c. of a 2 per cent. solution of neutralized yeast, nucleic acid injected subcutaneously in the chest wall. He advocates copious rinsing of the abdominal cavity with warm physiologic salt solution, as this has also a tendency to elicit hyperleucocytosis in the peritoneum beside its other advantages.

50E. **Thrombosis in Mesenteric Vessels During Operations.**—Payr noticed that the omentum appeared inflamed in 7 cases when the abdomen was opened. During the course of the operation he witnessed the development of thrombosis in the adjacent veins of the omentum or intestine. Nothing in the operation had inflicted any mechanical injury on these veins, as this was especially guarded against. Inflammatory processes evidently afford a predisposition. In case of infectious embolism, symptoms of intoxication predominate and the prognosis is serious; the hemorrhages appear early. In non-infectious embolism the hemorrhages do not appear until the seventh to the eighth day, and may be arrested by therapeutic measures or spontaneously. In case of extensive thrombosis of the mesenteric veins, the connected intestine should be resected, as also the omentum in case of thrombosis of any of its veins. It must be done very cautiously without traction or injury of the sound parts. Further data should be collected in regard to venous thrombosis in the abdominal organs, and it should be studied from a broader standpoint.

50F. **Horizontal Abdominal Posture After Laparotomies.**—Küster's experiments with colored fluids on cadavers showed that all the fluid injected into the abdominal cavity drained away when lying flat on the belly. In 6 cases of septic peritonitis he had the patients assume this position after the laparotomy, and here extols its advantages. A bolster under the chest allows the arms to be moved.

50G. **Treatment of Hernia by Injections of Alcohol.**—Brodnitz has treated 73 cases of hernia by injecting .5 to 5 gm. of alcohol around the inguinal canal, repeating the injection every second or third day until four to ten have been made. The tissues around the hernial opening swell and harden under the influence of the alcohol. The injections are continued once a week for two or three months, by which time there is a cicatricial induration which opposes an effectual barrier to the tendency to hernia. The results are most beneficial in the incipient cases and in children, but the method is applicable for all cases in which an operation is contraindicated or refused.

50H. **Treatment of Excessively Large Hernia.**—Madelung applies the term "übergrosse Hernien" to those in which reduction is impossible, even by an operation. He treats such cases by resection of the redundant mass of intestines, or by making a fistula in the afferent portion of the intestine. It acts like a safety valve, warding off constipation and its consequences. Helferich has observed 2 deaths following sudden reposition of

an excessively large hernia. Kausch resects the omentum in such cases, but has never resected the intestine for this cause alone.

50i. **Splanchnotripsy.**—Lanz has been applying Doyen's angiotribe to intestinal surgery for "splanchnotripsy," and comments here on its many advantages. It is particularly valuable in appendicectomy. He has not had a single death or fistula in 15 early and 405 cold operations for appendicitis since he has been using this splanchnotribe. Exclusion of the intestine is rendered easier by it, as also implantation of the ureter, making an artificial anus for a safety valve, etc. He found that the lumen of the intestine became permeable again in time, although the crushed strip was 1.5 cm. wide, and had been re-enforced by a ligature.

50j. **Early Operation for Kidney Tuberculosis.**—Kümmell emphasizes that the best way of curing tuberculosis of the bladder is by removing the kidney responsible for the infection. The bladder should never be operated on for local tuberculosis, but the kidney above should be removed as soon as possible. In 260 operations on the kidney, tuberculosis was found in 48, all but 15 of the subjects being women. A primary focus elsewhere in the body was certain or probable in every case. The kidney became infected by way of the blood or lymph, and the bladder was infected in turn from the kidney. Tubercle bacilli were found in the urine in all of the 6 cases reported in detail, although considerable efforts were required to detect them. The prognosis of tuberculosis of the kidney is favorable on condition of complete removal of the organ. He obliterates the ureter its entire length by inserting a galvanocautery in the shape of a sound, which can be heated for 10 cm. from its tip. It is inserted cold in the ureter from the nephrectomy wound to the bladder, and the current turned on. This insures the complete obliteration of its entire lumen. Of the 32 nephrectomized, cured subjects followed to date, the interval since the operation is fifteen to three years in all but 5, and two years in the latter. Eight patients have been nephrectomized during the last year. Krönlein of Zurich reports 24 still living out of 34 tuberculous nephrectomized patients. None of the deaths was due to insufficiency of the remaining kidney. The interval since the operation has ranged from one to fourteen years. Küster remarked that the finding of tubercle bacilli is not an infallible sign of urogenital tuberculosis. He has recently encountered a case of this kind. In the course of a convulsion there was hemorrhage from the urinary organs, and tubercle bacilli were detected in the urine, and yet both kidneys were completely free from tuberculosis—as shown by excised portions—and there was only interstitial atrophy. He advocates exposure of both kidneys to decide in dubious cases. Rosenstein emphasized the value of palpation of the ureters through vagina and rectum as an aid in the diagnosis. The ureters are involved very early in a tuberculous affection of the kidneys, and the positive results of palpation of the ureters may dispense with their catheterization. Steinthal's experience has been that tuberculosis of the kidney is very rarely primary, and that the other kidney is liable to become affected in time. In one case there was an interval of five years of health after nephrectomy, but then the remaining kidney presented the same symptoms. He believes in operating only in case of severe, destructive processes, but Kümmel insists on the progressive nature of the affection. Kapsammer stated that exposure of the kidney alone does not always suffice. In one instance he found a cavity in the upper pole on slitting the organ when nothing in the aspect of the kidney had indicated its existence.

50k. **Venous Hyperemia.**—Henle's technic has already been described in these columns. A rubber tube is wound around the limb and held with a clamp. It is then pumped full of air, which insures constriction with accurate dosage of the pressure by connecting the tube with a manometer. This technic is particularly valuable for constriction preliminary to local anesthesia.

51. **Sweeping Out the Choledochus.**—The German word which Kehr employs, "Fege," is the term applied to sweeping out a chimney. He now makes a practice of cleaning out the common bile duct by pulling a strip of gauze through it, thus sweeping out all concrements that may be lurking in it. He has found that the gauze always brings numerous small stones or scraps to view, whose existence it was impossible to determine by any other means. In one case he repeated the process five times before all the scraps of concrements were completely removed. In this case, as in 2 other similar ones, he performed ectomy, cysticotomy, incision of the supraduodenal portion of the bile duct, duodenotomy, papillotomy, "choledochus-fege," choledochus drainage and hepaticus drainage. The length of such an operation varies from an hour to an hour and a half. Recovery was uneventful in each instance, as also in his 6 cases of drainage of the hepatic duct. Since last April he has performed 25 gallstone operations, and found stones in the common bile duct in 9 of them. After removal of the gall bladder he slits the cystic and common bile duct to the duodenum and removes the stones from the retroduodenal part of the duct, pushing them up and picking them out with forceps. Exposure of this part of the duct never caused any appreciable hemorrhage. In 2 cases he mobilized the duodenum according to Kocher's technic and found it a valuable aid. In 3 cases he was obliged to incise the duodenum. The papilla was seized with König forceps, incised and the stone removed. He then inserted a forceps of the kind Kocher uses for drawing down and out a hernial sac, inserting it from the duodenum into the papilla, and pushing it through the bile duct in the direction toward the liver, until it appeared to view again in the incision in the supraduodenal portion of the duct. The blades of the forceps were then slightly opened and a narrow strip of moist gauze was placed between the blades and drawn down backward with the forceps into the duodenum, thus sweeping out the bile duct as a chimney is swept. He thus advocates for suitable cases transduodenal choledochotomy, with consecutive "choledochus-fege" and careful suture of the duodenum, reinforcing the suture with omentum, as a thorough and certain operation which has afforded excellent results in his hands, as he describes in detail.

52. **Prophylactic Hemostasis in Trephining.**—Heidenhain's method of preliminary hemostasis—described in THE JOURNAL, xlii, page 930, abstract 71—has been modified by von Hacker, who takes merely a single row of the overlapping stitches on the outer side of the incision for the flap, instead of on both sides. This leaves the flap intact, while the hemostasis is ample for the purpose of trephining. He describes a case to show the advantages of this technic. Of course, this percutaneous running stitching with a single thread is adapted for the cases alone in which no large vessels are involved in the base of the flap.

53. **Open Treatment After Transplantation.**—Brüning waxes enthusiastic over the fine results observed when the wound is left open to the air after application of Thiersch flaps. Healing proceeds very rapidly, both on fresh and granulating wounds. He has found this technic peculiarly valuable for operation under local anesthesia, such as is generally used for Thiersch grafting. When possible, he has the patient remain lying quietly on the table for several hours before he is moved, to allow the grafts to adhere to the surface beneath before he stirs. When the subject is in bed he applies a wire frame over the part to protect it from contact with the bedding. Serum exudes between the grafts and sometimes forms tiny blisters under them. The grafts are usually firmly adherent in six to eight hours, and he lightly presses out the serum from the blisters, using a gauze pad for the purpose, without fear of dislodging the grafts. A dressing can be applied during the night if there is danger of rubbing the parts during sleep, but otherwise he prefers the open treatment for both day and night. The grafts all healed in place by the eighth day, at latest, the superfluous parts along the edges drying up and dropping off. None of the grafts shriveled afterward. There is not the slightest tendency to maceration with this open treatment; the blood coagulates and helps to hold the grafts, and the danger of displacing them by the dressings is entirely obviated.

Deutsche medicinische Wochenschrift, Berlin and Leipsic.

54 (XXX, No. 31.) *Diminished Responsibility. G. Aschaffenburg.—Verminderte Zurechnungsfähigkeit.
55 Fractures of Auditory Canal. Passow.—Anatomische Untersuchungen über das Zustandekommen von Gehörgangsfrakturen, mit Krankenvorstellung.
56 *Ueber die Rückbildung der Mäuse-Karzinome unter dem Einfluss der Radium-Strahlen. H. Apolant (Ehrlich's laboratory, Frankfurt).
57 *Behandlung und Heilung der Alopecia areata durch direkte Bestrahlung mit kaltem Eisenlicht (with cold iron light). E. Kromayer.
58 *Ein neues immunisierendes Heilverfahren der Lungen-Phthise mit Perlsucht-Tuberkulin. C. Spengler (Davos).
59 *Klinische Erfahrungen über die Dekapsulation der Nieren beim Morbus Brightii. P. Rosenstein (J. Israel's clinic, Berlin).
60 Disturbances in Hearing. Treitel.—Ueber Störungen des musikalischen und Sprach-Gehörs.
61 Neuere Erfahrungen über die Therapie der perniziösen Anemien. E. Grawitz. (Commenced in No. 30.) See abstract in last issue.
62 Letter from America. A. Hoffa.

54. **Diminished Responsibility.**—Two recent sensational cases in Germany, the Dippold and the Prince Arenberg cases, have focused public attention on the questions of diminished responsibility and the socially dangerous insane. Several important works have been published on the subject, and the tenth conference of the German branch of the international association for the study of criminology adopted a set of resolutions at the Stuttgart meeting in May. The lawyers' congress, to convene in September, has also appointed these questions for discussion. Aschaffenburg reviews the recent works and discusses the views advanced, giving the Stuttgart resolutions, which are as follows: 1. Criminals not fully responsible for their acts should receive a milder sentence. Appropriate measures to protect society should be imposed in the case of those acquitted on account of absolute lack of a sense of responsibility, as also for those whose sentence is milder on account of diminished responsibility. Similar protecting measures should be imposed on persons with diminished or lacking sense of responsibility, although they have not yet committed a crime. These protecting measures should be imposed by a special process similar to the process of the guardianship of minors. 2. The president of the international association is commissioned to request that a law to this effect be enacted for the empire. 3. Mentally deficient prisoners should be placed under the special supervision of the physician. The physician should have the deciding voice in regard to these prisoners' disciplinary and other treatment, and also in regard to appealing for their release from the full execution of their sentence.

56. **Retrogression of Carcinoma on Mice Under Radium Rays.**—Apolant has previously described his cancer research on mice. (See page 1111 of vol. xlii.) He here illustrates the microscopic findings during retrogression of the carcinomas under the influence of radium rays. The carcinoma cells vanish, and there is a proliferation of connective tissue. The radium rays evidently have a specific destructive action on the carcinoma cells, supplemented by the inducing of a specific absorption of the dying carcinoma cells under the influence of the rays. This specific action is shown peculiarly vividly in the case of carcinomata on mice, as the dying cells are not absorbed nor cast off without the radium exposures, the animals otherwise carrying them around as dead ballast so long as they live. This necrotic mass is generally cast off under intensive radium treatment powerful enough to induce ulceration and transform the cancer into an open ulcer, after which the cancer cells are absorbed and the lesion heals. The rays have to be applied so vigorously to accomplish this result that some of the animals succumbed. The lack of penetrating power imposes a limit on the efficacy of radium treatment which renders it dubious whether as a therapeutic measure it has much of a future.

57. **Successful Treatment of Alopecia Areata with Iron Light.**—Kromayer of Berlin does not hesitate to proclaim that phototherapy with the iron lamp is by far the most effectual means at our command for treating alopecia areata. We can confidently count on a cure with it, even in those cases in which all other measures have totally failed. His technic is simple, convenient and does not require much time. The results observed confirm the assumption that alopecia areata is not a parasitic affection. All that is required to cure it is a stimulus, and this is supplied by the superficial inflammation of the skin induced by the iron light; it extends along the hair follicles to their depths and stimulates the roots of the hair to renewed proliferation. He gives the details of 6 cases thus treated with the iron "triplet" or "dermo" lamp. (See abstract of his previous communication on the subject, page 1119 of vol. xli.) Another promising field for the cold iron light is in superficial disinfection of the skin. This light does not require preliminary compression of the part.

58. **Immunization of Consumptives with a Bovine Tuberculin.**—Spengler makes a tuberculin from bovine material which has very pronounced therapeutic value, while the reaction that follows its use is like that of very weak human tuberculin. He calls it Perlsucht-Original tuberculin (P. T. O.). It is the filtered bouillon in which Perlsucht bacilli have been grown until they formed a very thin film over the surface. The bouillon is evaporated to one-half, the missing fluid substituted by glycerin. The initial dose is 1 mg. diluted with 9 mg. of a .5 per cent. carbolic solution. The injection is made centrifugally in the forearm, and is repeated, doubled, when every trace of the consecutive edema has vanished. In case of great debility he rubs the tuberculin into the skin of the arm instead of injecting it. He has found this percutaneous method especially valuable for acute tuberculosis in children. He uses it also at times for the Koch tuberculin. He combines the two in his new technic and calls a patient cured when he can take an alternating dose of 100 mg. P. T. O. and 100 mg. tuberculin (Koch's T. O. A.) without reaction, and constantly negative sputum findings. By this technic the course of treatment with tuberculin can be very much shortened and more complete results attained. There is absolutely no danger from the Perlsucht tuberculin. The very first doses confer marked immunity. Spengler believes that human and bovine tuberculosis were originally one, but that the bacilli have adapted themselves to their hosts until each has become the vaccine material for the other. The Perlsucht toxins are much less virulent for man than human tuberculosis toxins.

59. **Decapsulation of the Kidneys.**—Rosenstein reports 6 cases from Israel's clinic and sifts Edebohls' published material. He concludes that all the cases cured by decapsulation of the kidney were merely inflammatory processes, due to abnormal movability of the organ. Bright's disease is never unilateral, and the unilateral cases cited as evidence of the efficacy of the treatment must have been merely inflammation of a wandering kidney. In severe Bright's disease, decapsulation of the kidney has a mortality record of 26 per cent. Permanent cure has not been obtained in a single instance, and in the cases in which improvement was noted the edema persisted in one case and the albumin and tube casts in the urine. In another case the headaches and scotoma persisted unmodified.

Münchener medicinische Wochenschrift.

63 (LI, No. 30.) *Ueber den Einfluss von Anomalien des Brust-Skeletts auf den Perkussions-Schall der Lunge und auf die Lage des Herzens. C. Bäumler.
64 *Ueber Behandlung schwerer komplizierter Frakturen mit Aufklappung und temporärer Vorlagerung der Fragmente (bringing out the stumps). G. Doberauer (Prague).
65 *Results of Single Carlsbad Course on Gallstones. F. Fink.—Die Erfolge eines einmaligen Kur in Karlsbad bei Gallensteinkranken.
66 Ueber Bestimmung des Hemoglobin-Gehalts mittels der Tallqvistschen Skala. zur Verth and Schuhmacher.
67 *Odor of Infant Feces. P. Selter (Solingen).—Die Gerüche der Säuglings-fäces.
68 Die Behandlung des Ekzems mit den neueren und neuesten Mitteln, u. a. auch am eigenen Körper untersucht. L. Mayer (Munich).
69 *Zur Hygiene des Rauchens (of smoking). J. Bamberger.
70 Schwere Nephritis nach Einreibung eines Scabiösen mit Peru-Balsam. A. Glassmann.
71 Suture of Fresh Laceration of Perineum. G. Vogel. Ibid. J. Eversmann.
72 "To Promote the Study of the History of Medicine." K. Sudhoff.

63. **Anomalies in Chest Wall.**—Bäumler has sometimes found that the diagnosis of tuberculosis was based on abnormal percussion findings due solely to anomalies in the bony frame of the thorax, while the lungs were sound in reality. In examining patients, special attention should be paid to the sym-

metry of the halves of the thorax, both sitting and standing. The size, shape and depth of the supraclavicular regions on each side should be compared. Slight scoliosis may cause the bulging of the rear portion of the upper ribs, with consequent abnormal percussion and auscultation findings, although the lungs may be perfectly sound. It is a good plan to inspect the seated patient from behind, comparing the sagittal diameter of both sides of the chest, and tracing the spine its entire length. An irregular configuration of the "shoulder girdle" is responsible for many abnormal findings on percussion. The anomalies in the chest wall usually entail a displacement of the heart. When the spine is abnormally straight, the front intercostal spaces are liable to be very wide. This pushes the sternum up and the heart lies with a greater portion of its surface parallel to the wall of the thorax than in normal conditions. The apex beat is broader and stronger. The reverse occurs when the spine is unduly curved, and its sideward curve also has an influence on the position of the heart. The organ may be perfectly sound, but these unusual positions may simulate hypertrophy of the left ventricle, especially in rapidly growing young persons with an "excitable heart."

64. **Temporary Exposure of Stumps in Complicated Fractures.**—At Wölfler's clinic it is the practice now in severe, complicated, septic fractures to avoid amputation, if possible, by freely exposing the parts. Five cases thus treated are described in detail. The fractured leg or arm was turned back on itself in such a way as to make the wound gape and the fractured stumps project, the stumps held well apart by antiseptic sponges. This allows better inspection of the wound, does away with all menacing recesses and dead spaces and injury of the soft parts from the jagged stumps. Necrotic tissues can be more readily removed and drainage facilitated. When mere incision and drainage prove ineffectual, this opening up of the region may control the severest infection and save the limb after failure of all other measures. It is so simple and effectual that it can be applied even without waiting to try other measures, in certain cases, and may save many a limb otherwise doomed to amputation.

65. **Results of a Single Carlsbad Gallstone Course.**—Fink has been practicing at Carlsbad for about a dozen years. He reports his observation of 263 cases of gallstones in which a single course of treatment was taken. In the majority of cases the gall bladder did not cause any symptoms. The disturbances in the liver predominated, and had been the incitement to the Carlsbad course. A single course resulted in an apparent permanent cure in 72.83 per cent. of a former series of cases and in 87.33 per cent. of the present series. Its efficacy is limited by long continuance of the affection, by a superposed infection and by chronic occlusion of the bile duct. Hence the importance of early diagnosis and treatment.

67. **Odor of Infants' Feces.**—Selter comments on the rather agreeable, acid, aromatic odor of normal breast-milk stools, due to the fat acid and lactic acid and absence of albumin putrefaction. Any change from normal is evident at once in the odor. Cow's milk stools are always pasty, whitish, alkaline and have a true fecal odor. In mucous catarrh of the intestines the stools smell more like wet hay, when digestion is good, but this odor is overshadowed by putrefaction or fermentation. The nose is thus able to determine conditions in the digestive tract, sometimes before they can be revealed by any chemical tests, thus disclosing impending fatty diarrhea, fermentation of carbohydrates or of albumin, etc.

69. **Hygiene of Cigar Smoking.**—Bamberger classifies smokers as the "dry" and the "wet." The "dry" smokers are those who hold the cigar in their ups without wetting it with saliva. This is free from the dangers of "wet" smoking—that is, allowing the cigar to soak in the saliva. The saliva dissolves out of the tobacco many harmful substances which are swallowed and help to induce tobacco poisoning. Alcohol in the stomach, even in minute amounts, aids in the dissolving and rapid diffusion of the swallowed poisons. All cases of tobacco poisoning probably have occurred in "wet" smokers. Cigarettes are not wet in this way so much; their harmfulness is mainly in the large number used and the swallowing of the smoke. Chewing tobacco contains so little nicotin that it can scarcely be regarded as directly harmful, especially as it lacks the products of combustion. When nicotin poisoning from this source does occur, it assumes a special type, a painful weakness, hallucinations, tendency to suicide, with various sensory disturbances (deafness, loss of sense of taste) and prosopalgia, neuralgia. Erb has recently noted a connection between arteriosclerosis and tobacco (see page 232), and Bamberger has had occasion to observe an attack of angina pectoris, with other manifestations of arteriosclerosis in a "wet" smoker of 40. Erb has also informed him in regard to a still later case in a young man, a pronounced "wet" smoker, but free from other taints. Smokers should be warned to keep their cigars dry and to take them out of the mouth between the whiffs. Thoms has recently patented his method of preventing tobacco poisoning. It is based on the fact that certain iron salts hold in combination the bases of tobacco smoke. Cotton impregnated with ferric chlorid is an efficient filter for this purpose. It holds back 77.78 per cent. of the nicotin and its bases, and 86.11 per cent. of the ammonia. The ethereal brenz oil and surphur hydrate are completely held in combination and none escapes. A tampon of cotton dipped in ferric chlorid, applied to the tip of the cigar, will thus afford efficient protection against tobacco poisoning. It is even affirmed that it improves the flavor of a cheap cigar, making the flavor more like that of genuine Havana tobacco, on account of the effacement of so much of the nicotin and of the rank-smelling chemicals in the cheap tobacco.

Books Received.

Acknowledgment of all books received will be made in this column and this will be deemed by us a full equivalent to those sending them. A selection from these volumes will be made for review, as dictated by their merits, or in the interests of our readers.

A PRACTICAL TREATISE ON GENITO-URINARY AND VENEREAL DISEASES AND SYPHILIS. By Robert W. Taylor, A.M., M.D., Clinical Professor of Genito-urinary Diseases at the College of Physicians and Surgeons (Columbia University), New York. Third Edition, Thoroughly Revised. With 163 Illustrations and 39 Plates in Colors and Monochrome. Cloth. Pp. 757. Price, $5.00. New York and Philadelphia: Lea Brothers & Co.

SPECIAL CATALOGUE OF THE HYGIENE EXHIBITION, German Empire. The World's Fair in St. Louis. Catalogue on the Exhibits on Hygienic Matters and of All Other Exhibits, Prepared Under the Direction or the Participation of the Imperial Board of Health in Berlin. Paper. Pp. 246. Berlin: Julius Springer. 1904. St. Louis: Emil Savor, Educational Building.

THE PRINCIPLES AND PRACTICE OF GYNECOLOGY, for Students and Practitioners. By C. C. Dudley, A.M., M.D., President of the American Gynecological Society. Fourth Edition, Revised. With 409 Illustrations in Colors and Monochrome, of which 18 Are Full-page Plates. Cloth. Pp. 771. Price, $5.00 net. Philadelphia and New York: Lea Brothers & Co. 1904.

A MANUAL OF PRACTICAL MEDICAL ELECTRICITY. The Roentgen Rays, Finsen Light, Radium and Its Radiations and High-frequency Currents. By Dawson Turner, B.A., M.D., F.R.C.P. Edin., M.R.C.P. Lond., President of the Royal Scottish Society of Arts. Fourth Edition, Revised and Enlarged. Cloth. Pp. 435. Price, $4.25. New York: Wm. Wood & Co. 1904.

THE PURIN BODIES OF FOODSTUFFS and the Rôle of Uric Acid in Health and Disease. By I. Walker Hall, M.D., Assistant Lecturer and Demonstrator in Pathology, the Owens College. Second Edition, Revised. Cloth. Pp. 201-xiii. Price, $1.50 net. Philadelphia: P. Blakiston's Son & Co. 1904.

TRANSACTIONS OF THE SOUTHERN SURGICAL AND GYNECOLOGICAL ASSOCIATION. Volume XVI. Sixteenth Session Held at Atlanta, Ga., Dec. 15, 16 and 17, 1903. Edited by W. D. Haggard, M.D. Cloth. Pp. 486. Published by the Association. 1904.

AN INDEX OF SYMPTOMS AS A CLEW TO DIAGNOSIS. By Ralph Winnington Leftwich, M.D., Late Assistant Physician to the East London Children's Hospital. Third Edition. Cloth. Pp. 398. Price, $2.00. New York: Wm. Wood & Co. 1904.

DISEASES OF THE STOMACH AND THEIR SURGICAL TREATMENT. By A. W. Mayo Robson, F.R.C.S., and B. G. A. Moynihan, M.D. Lond., F.R.C.S. Second Edition. Cloth. Pp. 508. Price, $4.25. New York: Wm. Wood & Co. 1904.

THE CLASSIFICATION AND PATHOLOGY OF BERI-BERI. By Hamilton Wright, M.D. (McGill), Honorary Fellow of Johns Hopkins University. Paper. Pp. 74. Price, 3s. 6d. net. London: John Bale, Sons & Danielsson, Ltd. 1903.

EL HOSPITAL LAS ANIMAS. Por el Dr. Enrique B. Barnet. Con un Apendice por los Dres. Juan Guiteras Y Mario G. Lebredo. Publicado Para Distribucion Gratuita. Paper. Pp. 51. Spanish and English Edition. Habana. 1904.

CHAPPA Acropatia Mutilante Informe Presentado al Jefe de Sanidad de la Republica. Por el Dr. Juan Guiteras. Publica para Distribucion Gratuita. Spanish and English Edition. Paper. Pp. 41. Habana. 1904.